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ABSTRACT

Guidelines for implementing an exploratory career education curriculum in agribusiness and natural resources for Rhode Island students in grades 7-9 are presented. Section 1 presents a rationale, general objectives, suggestions for teacher preparation, explanation and scoring of interest inventory and achievement test, and resource list development. Section 2 presents eight individual units which explore occupations that a Rhode Island employment study found were in need of trained people, with employers willing to hire young people: (1) floriculture, (2) turf management, (3) landscape-nursery, (4) resource conservation management, (5) marine resources, (6) outdoor recreation, (7) food products, and (8) small animal technology. Each unit contains information regarding objectives, a list of major businesses, suggested learning activities, student learning exercises (with objectives, material, and procedures), achievement test and answer master, interest inventory and key, the script of slide presentation developed by the University of Rhode Island, and a resource list. A final section discusses career education and lists additional University of Rhode Island publications. (LH)

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GUIDELINES FOR CAREER EDUCATION 7-9

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FOR

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ISLAND

AGRIBUSINESS

AND

NATURAL RESOURCES

2

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island 02881
1974

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TABLE OF CONTENTS

Section		Page
I	Introduction	
	Acknowledgements	1
	Career Education Rationale	3
	General Objectives	5
	Student Learning Objectives	6
	Suggestions for Teacher Preparation	7
	Explanation of Interest and Achievement Test	9
	Scoring Procedures of Achievement Test and Interest Inventory	10
	Guide for Developing a Resource List	11

Section		Page
II	Individual Units	
	Floriculture	
	Introduction.	13
	Unit Objectives	14
	List of Major Businesses.	15
	Suggested Learning Activities	16
	Student Learning Exercises.	17
	Achievement Test.	19
	Achievement Test Answers Master	21
	Interest Inventory and Key.	23
	Slide Script.	25
	Resource List of Informational and Audio-Visual Materials.	31
	* Other areas follow this general format	
	Turf Management	33
	Landscape-Nursery	51
	Resource Conservation Management.	69
	Marine Resources.	89
	Outdoor Recreation.	108
	Food Products	128
	Small Animal Technology	150
III	Final Section.	170

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Rhode Island teachers of agribusiness and natural resources and numerous industry personnel deserve much credit for their contributions to the completion of this project.

STAFF MEMBERS

Project Director.....Donald E. McCreight

Secretarial Staff.....Mamie Chen

Linda Mugica

Research Assistants.....Wayne Carlow

Lyle Mook

CAREER EDUCATION RATIONALE

Career Education is defined in many different ways. The essence is that Career Education is a K-A concept, occupation-oriented, allowing the individual to become familiar with various career possibilities, develop his or her occupational skills, attitudes, and interests, as well as decision making capabilities.

A short time ago, our education system was meeting the needs of only one-third of our students who were college-oriented, leaving approximately two-thirds unprepared for their role in our society based upon a world of work. From a depicted deficiency in education came the need for change in our educational methods and procedures. Vocational programs were then initiated in various schools throughout our own state as well as throughout the nation.

Vocational education provides for competency in work skills and work experience. Career Education goes beyond this in providing instruction for career planning, decision making, and developing of occupational attitude and interests.

Today, Career Education stresses the development of the individual to insure greater success and satisfaction in the occupation of his or her choice. Through Career Education the student can realize that work can be satisfying, enjoyable and education meaningful. However, this is a theory that can only be implemented by and through the cooperative efforts of all individuals in the schools, home, and community.

Career Education is broken into phases of awareness, exploration, and specialization. Career Education in Agribusiness and Natural Resources involves student awareness and exploration of occupations in eleven employment fields. These are Floriculture, Marine Resources, Resource Conservation, Outdoor Recreation, Turf Management, Landscape-Nursery, Food Products, Small Animal Technology, Resource Mechanics, Agri-Services, and Production Agriculture. An employment study for Rhode Island on each of these areas showed the need for many trained people and willingness of employers to hire young people who were interested and have the desire to work.

Through exploratory Career Education, it is hoped that your students, grades seven, eight, or nine, will become aware of the fact that Agriculture is more than farming. There are many varied and different career opportunities and possibilities in the total field of Agribusiness and Natural Resources.

EXPLORATORY CAREER EDUCATION

AGRIBUSINESS AND NATURAL RESOURCES

GENERAL OBJECTIVES

1. To increase the student's awareness and knowledge related to the various careers in eight areas of Agribusiness and Natural Resources.

2. To provide the opportunity, through instruction and learning experiences, for a student to develop occupational attitudes and interests.

3. To introduce the student to considerations necessary and important in selecting possible careers.

4. To introduce the student to various work habits and techniques and offer encouragement toward early work experience and career planning.

5. To introduce the student to community resources, programs, and opportunities in the world of work.

SPECIFIC STUDENT LEARNING OBJECTIVES

1. The student will be able to identify at least one career in each of the eight major career areas in Agribusiness and Natural Resources.

2. The student will be able to list at least one career for each employment level (semi-skilled to professional).

3. The student will be able to briefly describe the nature of work for at least one career in each of the eight areas.

4. The student will be able to identify the competencies and skills required by at least three possible careers.

5. The student will be able to identify occupational interests to aid the decision-making process in making a tentative career choice.

SUGGESTIONS FOR TEACHER PREPARATION

1. Become familiar with the teacher's guide
   a. Review objectives (add yours)
   b. Review information available
   c. Review suggested learning activities
   d. Review tests

2. Preview all audio visual materials to be used

3. Decide on the approximate amount of instructional time for each area and schedule:
   a. resource people to be involved
   b. projects or demonstrations to be conducted
   c. field trips or tours
   d. classes and discussions
   e. testing and counseling

   * Make all arrangements (place, time, date, equipment, materials, etc., in advance)

4. Review supplementing sources for the unit

5. Plan student guide sheets

6. Plan on administering a pre-test quiz or summary questionnaire to determine students' levels. (May wish to use this to initiate discussion also.)

EXPLANATION OF INTEREST INVENTORY AND ACHIEVEMENT TEST FOR EXPLORATORY CAREER EDUCATION IN AGRIBUSINESS AND NATURAL RESOURCES

Incorporated within this resource unit is an achievement test and interest inventory. The achievement test is designed to cover essential information a student should know. The test may be used in whole, part, or just as a guide, according to the discretion of the teacher. It is recommended, however, that the achievement test be used as a learning experience.

The interest inventory is based upon competencies or tasks necessary to be performed for attaining various jobs in the career area. The student can select what he or she likes to do, dislikes, is somewhat neutral, or undecided about. One should keep in mind that it is the student's option to choose either a positive, negative, or neutral position and that the position chosen most likely is only a tentative choice subject to change from time to time.

Interest and achievement are all very much a part of preparing for various careers. The testing materials are included to help the instructor as well as the students. Modify and use as they best suit your needs in accomplishing your objectives. We urge you to be aware of the many variables which enter into any testing; and, therefore, use the utmost of caution in interpreting any and all results you may obtain.

SCORING OF ACHIEVEMENT TEST AND INTEREST INVENTORY

The achievement test is scored simply on the basis of the number of questions right or wrong out of the total number. If a pre-post testing method is used, then test scores can be used to give some indication of the degree of change in a student's achievement.

A suggested method for scoring the interest inventory is by using the numbers 3, 2, and 1, to correspond (respectively) to the students' responses of Like, Neutral, and Dislike. Notice that this scoring procedure places equal weight on each side of the neutral position (one degree value). After the 3, 2, and 1 values are assigned and tabulated, a recognizable "overall consistency" factor in terms of responses to L., N., and D. should exist. This should provide a fairly good indication of the student's overall interest or his interest in this career area as well as his interest or disinterest in a particular task, group of tasks, or occupational levels. A neutral position would be neither a positive or negative interest, remaining entirely neutral.

GENERAL RESOURCES

DEVELOPING A RESOURCE LIST

Most employers at local firms and businesses are very cooperative with educators within the community. It is suggested that teachers investigate and contact the owners or managers in industry within the local community to explain their program in Career Education and request their participation in compiling a survey of employment needs, the possibility of hiring students in cooperative work experience, and resource persons available for class assistance.

It is advisable for the instructor to keep a file of the information and of the resource people. This will prove to be, undoubtedly, of great value in determining the direction, emphasis, and depth of the program.

* Note: Copies of the slide-series developed by the University of Rhode Island for each area, most likely, would be available on loan from the State Department Film Library, upon request. When feasible, duplicate copies may be purchased from the Department of Resource Development Education, College of Resource Development, University of Rhode Island.

GUIDELINES FOR CAREERS

in

FLORICULTURE

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

FLORICULTURE

INTRODUCTION

The floriculture industry includes those firms and businesses involved in the production, design, marketing, and distribution of flowers and floral products. It's been a growing career area in the past few years with the potential employment opportunities increasing for trained personnel. Designers, greenhouse managers, sales and delivery people are just a few of the major workers needed.

Many owners are employing high school students on a part-time basis as part of a cooperative work experience training supplementing the high school program. Post high school training possibilities may include attending a college or university specializing in the area of plant science or perhaps attending special private schools in floral design and marketing. These and other training opportunities exist and should be explored by students interested in the floriculture field.

OBJECTIVES

It is the purpose of Career Education exploratory programs and units to introduce students to the training possibilities as well as the work possibilities. Students should be introduced to the careers of designers, managers, sales person, etc., and be aware of what it takes to acquire these jobs and to be successful in them.

1. Students will identify and describe at least one of the occupations associated with each of the types of businesses in Floriculture.
2. Students will demonstrate at least one skill associated with one of the occupations of their interest in Floriculture.
3. Students will identify five items associated with work in the Floriculture industry.
4. Students will describe the lifestyle of at least one worker in Floriculture.
5. Students will list the basic education and experience required for one occupation identified for each of the major types of businesses.

Below is a list of major businesses and agencies in Floriculture and a list of major occupations

I. Types of Businesses

Floral shop
Floral design
Production
Floral supply

II. Major Occupations

Skilled/Semi-skilled	Management/Supervisory
Greenhouse worker	Store manager
Propagator	Supervisor
Delivery man	

Clerical	Technical/Professional
Clerk	Owner
Secretary	Grower
Salesman	Designer

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Conduct several learning exercises based upon various tasks workers in the Floriculture industry perform. Relate these to various careers in the industry.

2. Invite a flower shop owner to come and present slides or bring an employee to demonstrate floral arranging.

3. With the aid of a floral chart, have the students select the flowers they are familiar with and list the possible uses or occasions of each.

4. Have several students keep a journal of all the times they see flowers during a week and for what uses.

5. From a list of job titles in greenhouse management or Floriculture, have students or groups of students pick a job title to make a brief report on, through visiting a facility or from other resource material.

6. Obtain permission to plant flowers around or near the school and give the students the responsibility for their care.

7. Take a field trip to a floral shop or greenhouse operation. Divide into groups and have the employees explain their jobs and the various phases of the business.

STUDENT LEARNING EXERCISES

Objective:

To acquaint the students with the fundamentals of flower arranging and floral design and relate the knowledge and skills necessary to become a designer

I. "Dried" Arrangement Exercise

Materials:

Styrofoam
Containers (vase, cup, driftwood, pipe, jar, bowl, basket, etc.)
Dried flowers and material

Procedure - Teacher:

1. Discuss principles of flower arranging (design, color, etc.).
2. Demonstrate; making a dried arrangement.
3. Explain the different materials (dried) and where to get them (roadsides, etc.).
4. Explain different containers and where they can be found.
5. Show some dried materials and containers.
6. Have students get their own material (optional).
7. Cut the styrofoam or other material in appropriate sizes.
8. Have the students start their arrangements.
9. Assist and evaluate the students' work.

Procedure - Student:

1. Obtain materials (except holding material and dried flowers) from home.
2. Obtain holding material from teacher.
3. Arrange the material as desired.
4. Have arrangement evaluated.
5. Takes the arrangement home.

Associated Careers:

Designer, assistant designer

II. "Live" Arrangement Exercise

Materials:

Styrofoam cup
Oasis or filfast
Flowers - Greens: bought at florists; 6 flower assortment minimum per student
Paint (to cover cups, if desired)
Knives or scissors
Florist wire

Procedure - Teacher:

1. Teach basic flower arranging principles.
2. Show pictures of arrangements.
3. Demonstrate arrangement.
4. Have cups ready and oasis cut in shape of cut.
5. Pass out flowers.
6. Have students make an arrangement.
7. Assist and evaluate students' work.

Procedure - Student:

1. Obtain cups.
2. Select flowers and greens.
3. Make the arrangement.
4. Have arrangement evaluated.
5. Take arrangement home.

Associated Careers:

Designer, assistant designer

FLORICULTURE

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. The largest demand for flowers in the floral industry comes from: _____
   a. funerals.
   b. weddings.
   c. churches.
   d. homes and decorators.

2. The types of flowers grown by the greenhouse owner: _____
   a. stays the same.
   b. changes according to the holiday season.
   c. changes according to the weather.
   d. depends on the number of workers available.

3. The use and sales of artificial flowers: _____
   a. has never been acceptable to the floriculture industry.
   b. is increasing.
   c. is decreasing.
   d. has always been at about the same level.

4. The two most important conditions to control in a greenhouse are: _____
   a. draft and heat.
   b. light and temperature.
   c. light and humidity.
   d. water and air circulation.

5. Which of the following is NOT a common item sold in the floral shop? _____
   a. Straw flowers
   b. Artificial flowers
   c. Vases
   d. All of the above are sold

6. Flowers used in the floral business are: _____
   a. all grown by the local business itself.
   b. sometimes received from growers all over the country.
   c. limited to regional varieties.
   d. limited as to the season of the year.

7. Which of the following skills is most important for the FLORAL DESIGNER? _____
   a. Make window displays
   b. Understand principles of design and color
   c. Understand people and their problems
   d. Identify different kinds of flowers

8. One trend that has been taking place in the floriculture industry is: _____
   a. a decrease in the use of greenhouses.
   b. a decrease in the use of potted plants.
   c. an increase in the use and sale of artificial flowers.
   d. an increase in sales to foreign countries.

9. Which of the following skills is NOT usually needed by the SALES PERSON? _____
   a. Wrapping flowers
   b. Using the cash register
   c. Planting seeds and bulbs
   d. Identifying kinds of flowers

10. Which of the following people in the floriculture business do not require a general knowledge of floriculture? _____
   a. Office worker
   b. Salesman
   c. Delivery man
   d. All of the above would require a general knowledge.

11. Retail floriculture businesses in the U.S. number about: _____
   a. 6,000.
   b. 16,000.
   c. 26,000.
   d. 36,000.

12. The majority of Rhode Island's floriculture businesses are: _____
   a. large corporations.
   b. family owned.
   c. connected with department stores.
   d. wholesaling businesses.

13. Which of the following would not be a necessity for a FLORAL DELIVERY PERSON? _____
   a. Courtesy
   b. Accuracy
   c. Be able to identify varieties of flowers
   d. Handle problems and complaints

14. Approximately how many people are directly involved in the floriculture industry in Rhode Island? _____
   a. 650
   b. 1,650
   c. 2,650
   d. 3,650

15. Which of the following skills is NOT usually required of a MANAGER? _____
   a. Knowledge of greenhouse machinery
   b. Keeping business records
   c. Making a window display
   d. Ordering seeds

FLORICULTURE

Achievement Test Answers Master

Question	Answer
1	A
2	B
3	B
4	B
5	D
6	B
7	B
8	C
9	C
10	D
11	C
12	B
13	C
14	A
15	C

Main sources of information used in developing test:

U.R.I. Slide-tape series:
"Careers in Floriculture"
Information pamphlets, brochures, etc., provided with units

FLORICULTURE

INTEREST INVENTORY

_____ 1. Wrap plants for a customer
_____ 2. Sell flowers to customers
_____ 3. Operate a greenhouse watering system
_____ 4. Deliver flowers
_____ 5. Cut fresh flowers and gather them into bunches for sale in the shop
_____ 6. Dig flower beds and fertilize them
_____ 7. Place flower arrangements safely in delivery truck
_____ 8. Construct walks and terraces for a greenhouse
_____ 9. Operate spraying equipment in a greenhouse
_____ 10. Pot plants, taking into consideration kind of pot and soil needed
_____ 11. Arrange artificial flowers
_____ 12. Cut and recondition flowers
_____ 13. Construct benches for a greenhouse or display purposes
_____ 14. Plant flower seeds and bulbs
_____ 15. Operate fertilizer machine in a flower bed
_____ 16. Harvest plants and prepare them to be sold
_____ 17. Wrap flowers for customers
_____ 18. Cultivate plants
_____ 19. Propagate plant cuttings
_____ 20. Keep records of the sales in a floral business
_____ 21. Discuss flower arrangements for weddings with customers
_____ 22. Type up orders for flowers received from customers
_____ 23. Keep account of which flowers are available and which need to be ordered
_____ 24. Speak to customers on the telephone and take orders for flowers
_____ 25. Keep records of checks made out to wholesalers for their plants
_____ 26. Sell flowers to customers
_____ 27. Make a floral arrangement for a funeral
_____ 28. Breed new flowering plants
_____ 29. Design a floral arrangement according to a customer's taste
_____ 30. Set up a lighting system to help plants grow
_____ 31. Decide what soil and chemicals need to be used for different plants
_____ 32. Instruct a course in flowering plants at a university
_____ 33. Plan the advertisements for a floral business
_____ 34. Hire and train greenhouse workers
_____ 35. Order flowers and plants from a catalog for your floral shop
_____ 36. Determine a price list for flowers and plants sold in a floral shop
_____ 37. Supervise greenhouse operations for a floral grower
_____ 38. Instruct employees on new ideas for flower arranging
_____ 39. Change lighting conditions so that winter plants will grow
_____ 40. Develop a planting schedule for the greenhouse

FLORICULTURE

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 19 Semi-skilled

20 - 26 Clerical

27 - 33 Technical or Professional

34 - 40 Management or Supervisory

CAREERS IN FLORICULTURE

Slide	Description	Script
1	Wedding flower display	A flower, like a picture, is often worth a 1,000 words. Flowers provide a vital link between man and nature, aiding him in expressing his deepest emotions of joy, love, and grief.
2	Title: "Careers in Floriculture" on top third of picture with close-up of flower underneath	As our leisure time increases, so will our appreciation and use of flowers increase. This means increasing opportunities for exciting and varied careers in Floriculture.
3	Credit slide	A look at the people and activities of the floriculture industry in Rhode Island, compiled by: The Career Education Project Resource Development Education University of Rhode Island.
4	Regular or wide angle shot of outside of a greenhouse layout	Floriculture is the business of growing and selling flowers. The need for trained people in growing, wholesaling, and retailing flowers is expanding.
5	Park shot	More flowers are being used for the traditional purposes of funerals, weddings, and so forth, as well as for landscaping, interior decorating, and just plain improvement of the environment.
6	Picture of the floriculture wall map with dots	In Rhode Island, over 650 people find their place of work in floriculture. Rewarding jobs are available for all levels of education and experience - from floral designer to greenhouse workers and owners. Nationally, there are 12,000 growers and 26,000 retailers.
7	Shot of girl outside of flower shop	Let's look at some of the more common occupations and what skills are learned and used in each.
8	Floral designer arranging flowers	The floral designer is an artist; not using paint or chalk, but flowers. The designer must be able to understand people and their problems and desires in order to give the customer that special satisfaction he craves.

Slide	Description	Script
9	Floral arranger with wreath	In addition, the floral designer must understand the principles of design and color. This worker is arranging what is called a funeral wreath. Fifty percent of sales are in connection with funerals.
10	Making a floral design	The floral designer must know the basic kinds of arrangements. This designer is making a centerpiece. Do you know what kind of flowers she's using?
11	Floral designer using stemming machine	This designer is using a stemming machine that puts a sharp metal point on the stem of the flower so that it can be easily inserted into the styrofoam or other holding material. Many kinds of holding materials and containers are used in floral arranging.
12	Window display	Designing shop layouts and window displays is another skill learned by the designer. A person is limited only by his imagination and creativity. Also, the floral designer often works with artificial flowers which are becoming more popular and finding new uses.
13	Delivery man loading truck	Another worker in the floriculture industry is the FLORAL DELIVERY PERSON, shown here loading the van with the right flowers desired by a customer.
14	Delivery man with manager	The delivery man must be courteous and accurate and be able to handle any complaints or problems that arise. Often, a delivery person learns the skills of the greenhouses and flower shops as well. Here, the delivery person discusses a sale with the manager of the shop.
15	Laborer constructing or standing by cold frames, benches, etc.	Many floriculture businesses have their own greenhouses as well. Much physical work goes into producing the crop itself. The greenhouse worker must be skilled in constructing cold frames, benches, flats, and other structures and materials.

Slide	Description	Script
16	Plastic greenhouse	An owner must decide the kind of greenhouse that can economically meet his needs. This is a special type of plastic greenhouse.
17	Laborer planting seeds or bulbs	Much know-how is involved in planting seeds and bulbs. Soil tests must be made (usually by the manager or foreman) and proper fertilization and soil condition established before the soil is ready. The greenhouse worker must know the proper times and conditions for planting each flower variety.
18	Laborer potting plants	This worker is potting plants for shipment in another area.
19	Transplanting tulips	He must know how and when to transplant potted plants as well and know what kind of soil mixture is best for each plant.
20	Stringing carnations	These men are stringing carnations, using wire and string to make sure the plants will stay upright.
21	Laborer harvesting plants	This worker is harvesting daffodils for use in Easter arrangements.
22	Salesperson wrapping flowers for customer	The salesperson in a floral shop has many duties and skills to perform besides making sales to customers. He or she must be able to identify ALL flowers and accessories that are available for sale and how to wrap or prepare them for transport.
23	Salesperson advising a customer	The salesman must also know how to identify and select plants for specific uses and be able to take orders and advise customers concerning their purchases.
24	Salesman calling on an FTD order	Most importantly, the salesperson must be concerned about and interested in the customer and his wishes. Here is a salesman--calling ahead to another city, allowing the customer to send flowers long distance.

Slide	Description	Script
25	Novelty items	Novelty items are becoming more popular in the floral shop business for use in window displays and sales to homemakers for decorating.
26	Office worker - typing	As in every efficient business, there is a need for office personnel in floriculture with a background and knowledge in the floral business. This woman is typing bills to be sent out to customers who have charged their purchases. A large percentage of the sales are done this way.
27	Office worker - record keeping	Other skills necessary for the office worker would be bookkeeping and filing to help keep the business running smoothly. This lady is putting customer accounts on ledgers for easy filing.
28	Greenhouse foreman directing work	Knowing every job under supervision is a key part of being a greenhouse foreman. He must train new workers and provide supervision and direction of jobs to be done. He must also take soil samples to determine fertilizing needs and know each variety well.
29	Manager doing paper work	Keeping and analyzing records is a big part of the manager's job of assuring an efficient business. Here, we see him making a list of flowers and accessories to be ordered by the office personnel.
30	Owner-manager inspecting the premises	The owner-manager of a floriculture business must have past high school training and years of experience in many phases of the business. In a small business, the owner-manager may have the jobs of production manager and sales manager as well. In any case, the manager must see that the business runs smoothly. Every worker in floriculture must enjoy working with people and for people.

29

Slide	Description	Script
31	Manager at desk working on an order form	The manager must have much knowledge and skill in plant and soil science to determine soil conditions, plan crop rotations, order seeds and other materials. This manager is at his desk ordering supplies for the greenhouse operation. He must also be constantly studying and keeping up on the latest techniques and products.
32	Showing arrangements	Here a manager displays two of the newer developments in floriculture industry. The use of arrangements and dried flowers and bottles are called terrariums.
33	Showing bottles	
34	Man with sweater	Loving flowers and loving to serve people are two essentials of success in the floriculture business.
35	Manager showing dried arrangement	All of us appreciate the beauty and meaning that is the end product of the floriculture business. The floriculture worker serves so many so well; and as you can see, the floriculture industry provides many exciting career opportunities for the person who loves flowers and the people they serve.
36	Encased arrangement	(Music)

FLORICULTURE

Informational Material	Publisher
Young Men and Women Wanted For Retail Floriculture	Kansas State University Manhattan, KS
Horticulture: A Rewarding Career	American Society for Horticulture Science P. O. Box 109 St. Joseph, MI 49085
Get Involved with Plants and with Soils	Dept. of Plant & Soil Science College of Agriculture and Home Economics University of Vermont Burlington, VT 05401
Careers in the Floral Industry	The Society of American Florists 901 N. Washington St. Alexandria, VA 22314
Flowers and You	The Society of American Florists 901 N. Washington St. Alexandria, VA 22314

Audio-Visual Material

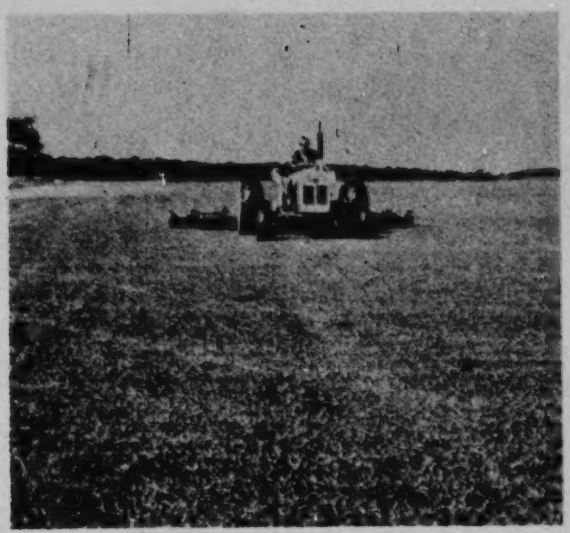
U.R.I. Slide-tape series:
"Careers in Floriculture"

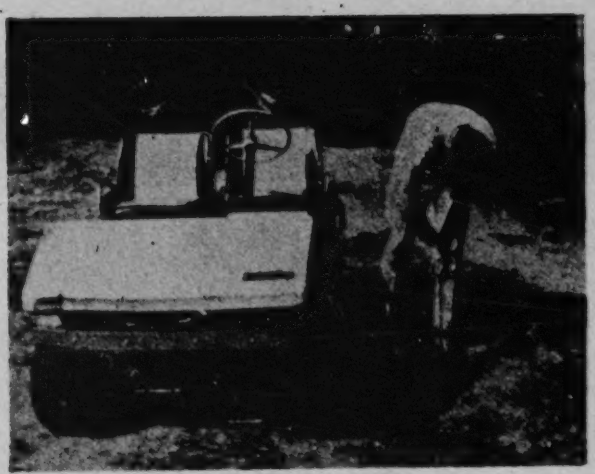
Filmstrip: "Careers in Ornamental Horticulture"
Vocational Education Productions
California State Polytechnic College
San Luis Obispo, CA 93401

Movie: "Of Lines and Flowers"
Sound - color, thirty minutes, free
Smithers-Oasis, Film Department
Box 118, Kent, OH 44240

GUIDELINES FOR

CAREERS IN TURF MANAGEMENT





RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

TURF MANAGEMENT

INTRODUCTION

Many occupations are associated with the growing, maintaining, and improving of turf. Turf Management is a relatively new and dynamic career area. Many occupations in the area are associated with turf farming. Examples are equipment operators, truckers, mechanics, and management personnel. From turf farms, cut or rolled turf is purchased by homeowners and landscape nurserymen ready to install.

Other occupations in turf may be a groundskeeper, greenskeeper, golf course superintendent, agronomist, or research assistant. These are but a few of many occupations awaiting those who are interested in careers in Turf Management. Part-time and seasonal opportunities are great. Many college and university programs also are available for further studies after high school.

OBJECTIVES

The number of turf management occupations has grown in the past few years. Good career opportunities exist which students should be exposed to and explore. Exploratory Career Education in Turf Management should offer students a chance to become more aware of the major occupations and opportunities.

1. Students will identify and describe at least one of the occupations associated with each of the major types of businesses in Turf Management.
2. Students will demonstrate at least one skill associated with one of the occupations of their interest in Turf Management.
3. Students will identify five items associated with careers in the turf industry.
4. Students will describe the lifestyle of at least one worker in Turf Management.
5. Students will depict the basic education and experience necessary for one occupation identified for each major type of business.
6. Students will relate one experience to a career in Turf Management.

Below is a list of major businesses in Turf Management and a list of major occupations

I. Types of Businesses

Turf production
Golf course
Lawn maintenance
Garden center
Research

II. Major Occupations

Semi-skilled/Skilled

Greenskeeper
Groundskeeper
Mechanic

Management/Supervisory

Foreman
Golf course superintendent

Clerical

Secretary
Bookkeeper

Technical/Professional

Owner
Agronomist
Turf specialist

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Visit the experimental turf plots at U.R.I. and/or visit a turf farm.

2. Have a laboratory-type session whereby students have the opportunity to experiment with various grasses and turf materials. (Growing and researching different turf)

3. Develop a small turf plot on the school grounds, containing several species of grass (properly labeled) which can be used as a teaching aid.

4. Invite a resource person in turf or associated areas to your school.

5. Have each student or groups of students responsible for obtaining information and corresponding photographs of turf workers in action.

6. Students should keep a career notebook which is relevant and complete on careers in turf management.

7. Have students make soil tests and subsequent fertilizing and liming recommendations for turf.

8. Bring in and explain use of as many different turf items (especially equipment) as you can.

9. Include as many students as possible in some sort of work experience training program in turf.

10. Have students design a mural display, illustrating the various careers in turf and local employment opportunities.

11. Have students formulate their own mix of grass, satisfying the requirements of a given set of conditions.

12. Assign each student a job level in turf (on a rotating basis) with specific tasks around the school related to this job to be completed.

13. Have students write a short paper on "Careers Associated with Turf Management."

STUDENT LEARNING EXERCISES

I. Developing an Experimental Turf Plot
(An indoor or outdoor activity)

Objectives:

For students, through experimentation (supplemented by research and class discussion), to learn the different varieties of turf, the essentials for growing good turf, and to learn tasks required for occupations in the turf industry.

Materials:

(Indoor)
1. Any box or flat 18" x 24" x 2" (or larger)
2. Clean, quality soil
3. Small hand-type garden tools
4. Length of hose with mist spray nozzle
5. Small quantities of fertilizer and lime
6. 4 different varieties of grass seed plus rye seed and hay seed
7. 4 pieces of wood to serve as dividers in the flats or boxes
8. Screen
9. Marking stakes

(Outdoor)
1. Select the size of the area which best meets your needs
2. Grading tools (shovel, hoe, rake, axe, roller, wheelbarrow, etc.)
3. Spreader for seed, fertilizer, and lime (could be done by hand)
4. 4 varieties of grasses plus winter rye and hay seed
5. Rototiller (if have) and a screen

Procedure:

1. Take sample of soil that will be used and send to U.R.I. for mixture and fertilizer recommendations. Send for information pamphlets and brochures.
2. Screen soil obtained into flats till approximately 3/4" from the top.
3. Wait for results, have regular class on various turfs in between.
4. Follow recommendations of reports.
5. Seed each section as diagramed
6. Keep a data sheet on all results and observations as long as experiment is continued. Discuss finding in class. Hold for future use.

Associated Careers:

Agronomist, greenskeeper, groundskeeper, turf maintenance superintendent

II. Practice Installing Rolled Turf (Can be simplified to use as a classroom demonstration inside)

Objectives:

1. To understand the advantage of using rolled turf
2. To understand the proper methods of installing rolled turf
3. To appreciate working with rolled turf in occupational terms
4. To afford students the opportunity to work with some tools and equipment associated with turfing operations
5. To develop an area for further and future learning experiences

Materials:

One tape measure plus four stakes and a driving hammer
Approximately twelve 4' lengths of cut turf
Rototiller (if have) or grub hoe, shovels, rakes, wheelbarrow
Cyclone spreader (if have) or buckets, if done manually
Roller
Extended hose with spray nozzle originating from water source

Procedure:

1. Stake out an area 10' x 12'. Select preferably a spot or site where there had been some difficulty in maintaining good turf.
2. Make arrangements for the purchasing and the pickup or delivery of the amount of turf needed.
3. Till and grade the soil over the area, removing any and all debris possible.
4. Calibrate the amount of fertilizer and lime needed for the job. Spread on manually or by machine and rake into the soil.
5. Lay rolled turf slightly overlapping to form a tight butt.
6. Roll butting ridges lightly.
7. Water.
8. Clean and put away tools.

Associated Careers:

Turf farming, turf maintenance, and landscaping

TURF MANAGEMENT

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. The total number of workers employed in Turf Management in Rhode Island is approximately: _____
   a. 100
   b. 400
   c. 700
   d. 1,000

2. _____ percent of turf firms are willing to employ high school students. _____
   a. 100
   b. 80
   c. 60
   d. 40

3. Minimum education preferred by the majority of employers in Turf Management is: _____
   a. high school graduation.
   b. 4 years of college.
   c. less then high school graduation.
   d. two-year post high school training.

4. In the turf industry there seems to be: _____
   a. less work opportunities than ten years ago.
   b. more inside-type work.
   c. more full-time work than seasonal.
   d. more seasonal work than full-time work.

5. To grow good turf to the "ready to cut" stage requires: _____
   a. two years' time.
   b. six months or less.
   c. at least one year's time.
   d. four years' time.

6. The turf cutting and reseeding operations are done mostly: _____
   a. February - April.
   b. November - January.
   c. September - November.
   d. May - August.

7. Most of the turf harvested would be shipped to: _____
   a. the homeowner.
   b. storage areas.
   c. landscape-nurseries.
   d. wholesale and retail stores.

8. For best results, it is advisable to lay turf which has been cut and rolled: ____
   a. within a week from the time it is cut.
   b. after it has dried out.
   c. the same day it is cut.
   d. in the fall.

9. Some of the job opportunities in turf are: ____
   a. groundsmen and gardeners.
   b. supervisors, owners, and managers.
   c. agronomist.
   d. all of the above

10. There are job opportunities related to turf at: ____
   a. golf courses and cemeteries.
   b. landscape-nurseries.
   c. estates and institutional grounds.
   d. all of the above.

11. Some of the operations one can most likely see going on at a turf farm would be: ____
   a. all of the below
   b. ball and burlapping, pruning.
   c. seeding, harvesting, shipping, and mowing.
   d. cultivating and transplanting.

12. Turf actually is: ____
   a. hay.
   b. grass.
   c. lawn.
   d. artificial.

13. Current trends show turf farming is _____ industry. ____
   a. a relatively new and growing
   b. quite old and outdated
   c. nearly bankrupt
   d. not a prospering business

14. To get into the turf business would be: ____
   a. overly expensive.
   b. relatively expensive with overhead costs.
   c. not expensive at all.
   d. less expensive because of low land costs.

15. Which job level isn't associated with the correct job below? ____
   a. Skilled and semi-skilled - trucker, mechanic
   b. Manager/supervisory - harvesting and reseeding crew foremen
   c. Office/sales - clerk-typist
   d. Professional - sodbuster, stacker

TURF MANAGEMENT

Achievement Test Answers Master

Question	Answer
1	D
2	C
3	A
4	D
5	A
6	D
7	C
8	C
9	D
10	D
11	C
12	B
13	A
14	B
15	D

Main sources of information used in developing test:

Employment studies
Interviews (Tuckahoe and Woodward Hall)
Slide-tape series by U.R.I.

TURF MANAGEMENT

Interest Inventory

1. Keep the "greens" at a golf course
2. Repair and maintain turf equipment
3. Operate turf equipment
4. Lay turf around home grounds
5. Stack rolled turf on pallets
6. Drive a truck for a turf farm
7. Plan and harrow fields for turf seeding
8. Mow, clip, and maintain cemetaries
9. Sharpen, maintain, and repair small equipment used on turf
10. Identify and take samples of turf problems
11. Work on turf problems for a local extension office
12. Keep books and records at a turf farm
13. Type correspondence for a turf farm operation
14. Handle office payrolls for turf workers
15. Handle turf business records
16. File applications and information on turf workers
17. Take phone calls and messages for turf businessmen
18. Take inventory to determine turf supplies needed
19. Take notes and dictation, schedule appointments for turf business leaders
20. Research various species of grass
21. Conduct soil tests for a turf farm
22. Teach a college course in turf management
23. Make designs and plans for a turf farming operation
24. Conduct research on various turf grass
25. Write and publish articles on turf
26. Establish grades and elevation for excavating in creating lawns
27. Supervise crews reseeding turf plots
28. Manage turf irrigation crews
29. Hire semi-professional and professional help for turf farming
30. Supervise turf harvesting operations
31. Supervise golf course maintenance
32. Manage turf farm equipment maintenance and repair shop
33. Supervise greenskeepers and groundsmen
34. Own and manage a turf farm
35. Manage experimental turf plots at a university
36. Evaluate salary scales and benefits for turf workers
37. Manage crews of turf workers in fertilizing or spraying
38. Supervise correcting of turf problems
39. Manage scheduling of turf farm operations
40. Manage purchasing of new turf equipment

TURF MANAGEMENT

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 11 Semi-skilled

12 - 19 Clerical

20 - 26 Technical or Professional

27 - 40 Management or Supervisory

CAREERS IN TURF MANAGEMENT

Slide	Description	Script
1	Building	We all enjoy beautiful lawns, whether they be around a building-
2	Golf course	or a country club-
3	Park	or at cemetaries or parks.
4	House unlandscaped	But, as any home owner knows, fine lawns and turf are not established or maintained by chance. There is a growing need for trained people in the area of Agribusiness and Natural Resources known as Turf Management.
5	Title slide	Presenting a look at the careers in Turf Management. Prepared by: The Career Education Project Resource Development Education University of Rhode Island
6	Golf course	Occupations related to Turf Management involve approximately 800 workers in R. I. A large percentage of these workers are associated with the growing number of golf courses in the state.
7	Group of men	Here, the golf course superintendent speaks with his crew concerning work to be done for developing a new section to the course.
8	Man with mower	The superintendent usually has post-high school or university education. He is responsible for improving and maintaining the turf without interrupting the play on the course. He also must purchase and oversee the maintenance of equipment, such as in this case, riding mowers.
9	Office	In addition, the superintendent is responsible for the interviewing, hiring, and training employees, keeping records and budgets, and making reports as well as purchasing materials. All these duties mean that the superintendent puts in long hours, especially during the growing season.

Slide	Description	Script
10	Man on golf course	The greenskeeper may perform the function of assistant superintendent as he may supervise crews of workers. He performs many duties and skills as well. Turning on an automatic watering system is one of them.
11	Greenskeeper taking sample	The greenskeeper must also understand the principles of agronomy or soil science in order to properly fertilize and recondition the turf. Here, the greenskeeper is making a soil test to determine the need for adding chemicals such as lime or fertilizer.
12	Man with mowing equipment	The assistant superintendent has many supervisory duties and he must have a thorough knowledge of the course plan and all phases of the golf course procedures. He knows that the operation and maintenance of the golf carts and other equipment are a vital part of the golf course business.
13	Repairing equipment	The proper use and repair of mowers, spreaders, seeders, and irrigation equipment is another aspect of the greenskeeper's job.
14	Tractor on grass	Other golf course workers perform necessary skills contributing to the smooth function of the business. Many times large sections of fairways are moved by tractor.
15	Thin spots	Another job is installing sod and renovating thin or bare spots and operating fertilizer spreaders, sprinklers, sprayers, and dusters. Pruning trees and shrubs and maintaining buildings are also part of the worker's job.
16	Owner-manager	The owner-manager must be able to oversee all phases of the golf course operation, including making decisions, relating to people, and handling emergencies. All superintendents report to him.
17	Mowing grass	The groundskeeper finds employment with industries, hospitals, schools, and universities. He must be knowledgeable and thorough in mowing and trimming lawns,

Slide	Description	Script
18	Man edging lawn	and caring for shrubbery and flowers, having a responsible attitude and appreciation for a job well done.
19	Campers	Turf management workers are also employed by parks and recreation facilities.
20	Park view	Knowing the work involved in maintaining these facilities should help us avoid taking a pleasant environment for granted.
21	Rototilling	The highway department also needs workers with turf management know-how.
22	Cemetary	Cemetaries, likewise, employ a large number of turf workers. The cemetary laborer learns the general skills of turf worker plus the removal of trees, shrubs, and installing sod.
23	Office	The cemetary superintendent must learn to understand people and their individual needs and advise them in matters of personal importance, such as choosing grave sites and buying lots.
24	Worker building wall	The superintendent must also be familiar with all licensing and insurance regulations applying to his business and have a thorough knowledge of cementing and concrete operations and maintenance of tractors for mowing, grading, or digging.
25	Students	Much summer employment is provided for students by private home owners requiring the skills of those with experience in lawn work.
26	Tractor plowing	In R. I. there is an increasing number of people being employed in turf farming. Acres and acres of fine healthy sod are grown for the uses of lawns and research. This worker prepares the soil for planting.
27	Turf stacked on trucks	After the turf has been established, it is kept mowed. Later, it is cut and piled by workers, ready to be sold to nurserymen and homeowners.

Slide	Description	Script
28	Agronomist at field house	Often, turf farms or occasionally golf courses employ the services of a trained agronomist - often a specialist in turf who has a master's degree or Ph.D. They are also employed at research stations, such as at U.R.I.
29	Grass plots	The agronomist may conduct experiments to improve the quality of turf grass through breeding and various growing techniques. Control of insects, diseases, and weeds are also major concerns.
30	Man mowing green	Perhaps now we can better appreciate the green carpet we all enjoy so much. It is hoped that this presentation has revealed the many opportunities for careers in the Turf Management industry.
31	Credit	Compiled by: University of Rhode Island Career Education Project Resource Development Education

TURF MANAGEMENT

Informational Material	Publisher
Lawn Weed Control with Herbicides Home and Garden Bulletin #123	U.S. Department of Agriculture Washington, DC 20250
Grasses for Lawns Bulletin #178	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Grasshopper Control Farmers Bulletin #2193	U.S. Department of Agriculture Washington, DC 20250
Velvet Bentgrass Bulletin #199,	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
American Beachgrass Bulletin #383	Agricultural Experiment Station University of Rhode Island Kingston, RI 02881
Lawn Insects - How to Control Them Home and Garden Bulletin #53	U.S. Department of Agriculture Washington, DC 20250
Lawn Planning & Construction R. I. Lawn Guide # 1	Dept. of Plant & Soil Science Woodward Hall University of Rhode Island Kingston, RI 02881
Lawn Diseases-How to Control Them Home and Garden Bulletin #61	U.S. Department of Agriculture Washington, DC 20250
Better Lawns Home and Garden Bulletin #51	U.S. Department of Agriculture Washington, DC 20250
Control of Turf Brown Patch Contribution #862	Agricultural Experiment Station University of Rhode Island Kingston, RI 02881

Audio-Visual Materials

U.R.I. Slide-tape series:
"Careers in Turf Management"

GUIDELINES FOR

CAREERS IN LANDSCAPE - NURSERY

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

LANDSCAPE-NURSERY

INTRODUCTION

Landscape-nursery is a career area one may want to investigate. There are opportunities for landscape architects, landscape foremen, greenskeepers, groundskeepers, plant materialists, plant propagators, and nursery specialists. Opportunities exist for those who wish to work only part-time or for those who may want to start their own businesses.

Many courses in plant science, maintenance of grounds, landscaping and nursery practices are being offerd in high school programs. In-depth training in the field can be attained through placement in a cooperative work experience program. Many two-year colleges and four-year universities offer programs for advanced professional training.

OBJECTIVES

Through exploratory Career Education in grades 7 - 9, students should have an opportunity to learn of some major jobs and associated tasks in the landscape nursery industry. Through this program they should also become more familiar with the type of workers involved, their duties, and their responsibilities.

1. Students will identify and describe at least one occupation associated with the major types of businesses in landscape-nursery.
2. Students will describe the lifestyle of at least one worker in landscape-nursery.
3. Students will identify at least five different items used by workers in the landscape-nursery business.
4. Students will demonstrate at least one skill associated with one of the occupations of their interest in landscape-nursery.
5. Students will depict the basic education and experience necessary for one occupation identified for each major type of business.
6. Students will determine at least one activity with a career in landscape-nursery.

Below is a list of major businesses and agencies in Landscape Nursery along with a list of some of the major occupations

I. Types of Businesses

Nursery
Landscaping service
Garden centers
Greenhouse

II. Major Occupations

Semi-skilled/Skilled

Propagator
Landscape-nursery laborer
Maintenance men

Management/Supervisory

Owners
Managers
Foreman

Clerical

Sales
Secretary
Bookkeeper

Technical/Professional

Landscape architects
Civil engineer

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Conduct outside lab sessions on planting (or transplanting), pruning, mulching, etc. Explain the proper methods for each exercise.

2. Make up some worksheets with ample space provided for notes on landscape-nursery. Have students complete them.

3. Contact several resource persons and schedule for their visits to your school.

4. Arrange for students to visit a landscape-nursery business.

5. Have students practice landscape designing. A text guide would be Landscaping Your Home by Nelson.

6. Have students identify twenty different landscaping materials used around the school grounds. Along with this should be an explanation of why they were used.

7. Have each student bring to class five samples of either an insect, disease, pest, or pollution problem in respect to plant materials. Identify and explain possible control methods.

8. Have students attempt to set up a yearly work schedule for a landscape-nursery.

9. Reserve some periods for both student and instructor demonstrations. For example, methods of plant propagation, pruning, grafting, spraying, equipment used, etc.

10. Have students develop (in groups) a complete plan for setting up a garden center in the local community.

11. Each student should be required to keep an accurate, complete, and up-to-date career notebook for landscape-nursery.

12. As a class, students should be responsible for organizing and developing a landscape-nursery career information center in the school which would be available for use by all students.

SUGGEST STUDENT LEARNING EXERCISE

I. Transplanting a Medium Size Tree or Shrub Around the School Grounds

Objectives:
1. To expose students to this phase of landscape-nursery work
2. To have students be able to actually use various tools associated with landscape-nursery work
3. To have students understand and appreciate the importance of knowing the proper way to transplant a tree or shrub used for landscaping

Materials:
Shovel or spade
Small saw or pair of pruners
Burlap and twine
A spike or the actual sewing instrument (if have)
Crowbar

Procedure:

Note: Let's assume that the tree or shrub has had the proper care and has been pruned quite recently. Let's also assume that we have chosen the best time when the best conditions for transplanting prevail.

1. Attach the twine near the top of the plant and then proceed to wrap the branches together. When the so-called "bundling" has been completed, then you are ready to begin digging.
2. Scrape back the loose material on the soil around the tree or shrub.
3. Using a shovel or spade, roughly outline the ball size on the ground. For this exercise, the outer edge of the plant's canopy can be your size guideline.
4. Make a larger ring around the tree approximately five to six inches from the first ring.
5. Remove the soil inside the margin of the two scribed lines. Do this completely around the tree until plant ball is free.
6. Slide burlap under ball, bring the loose ends up to the base of the trunk, and then thread the twine through the burlap and tie.
7. Remove plant from hole to select site. Dig a hole here somewhat larger than the plant ball size. The depth of the hole should be approximately the same as the depth of the plant ball.
8. Place plant in the hole and face, or straighten, it as you wish. Then fill the hole with water.
   (Note: Anything but burlap used on ball should be removed.)
9. Begin the back filling operation, tamping soil around the plant at various intervals.
10. Finish grade, put tools away, check your work. Stake or fence the plant if it is located in an area prone to the type injuries doing this would prevent.

Associated Careers:
Nursery laborer, landscaper

LANDSCAPE-NURSERY

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. Some careers related to landscape-nursery are: ____
   a. landscape architect, florist, fruit grower, and farmer.
   b. horticulturist, agronomist, botanist, and tree expert.
   c. none of these listed
   d. all of these listed

2. The occupational outlook for those seeking employment in landscape-nursery through the 1970s is: ____
   a. good for both men and women.
   b. good for men.
   c. good for women.
   d. fair for both men and women.

3. There are several types of nurseries, for example,: ____
   a. summer, winter, spring, and fall.
   b. wholesale, retail, mail order, and service.
   c. large plant, small plant, and foreign plant.
   d. industrial, educational, and scientific.

4. Advancement opportunities, salaries, and steadiness of work in landscape-nursery will vary according to: ____
   a. location and size.
   b. income and expense.
   c. summer and winter.
   d. education and experience.

5. There is _____ work for regular help in landscape-nursery with extra help hired at various times. ____
   a. usually nine months'
   b. bi-monthly
   c. year round
   d. seasonal, part-time

6. For a successful and rewarding career in landscape-nursery, it is essential that a person is: ____
   a. willing to work and likes to work with flowers.
   b. willing to work and likes to work with plants.
   c. willing to work and likes to work with soil.
   d. willing to work and likes to work outside.

7. Though some overtime may be necessary, the average workweek for a landscape-nursery worker is: ____
   a. 20 hrs. per week.
   b. 40 hrs. per week.
   c. 60 hrs. per week.
   d. 10 hrs. per week.

8. Due to a "false image" of nursery and landscape work, employers must rely on _____ for manual labor. ____
   a. white-collar workers
   b. immigrant laborers
   c. college students
   d. farmers

9. Recommended training for those interested in possibilities of future managerships, formanships, and ownerships in landscape-nursery is having completed: ____
   a. high school.
   b. part-time nursery.
   c. one year of a four-year college.
   d. a two-year technical school or junior college.

10. Of the _____ landscape-nurseries in Rhode Island, better than half are willing to employ high school students in work experience programs. ____
   a. 100
   b. 200
   c. 300
   d. 400

11. A landscape maintenance superintendent most likely will do: ____
   a. office and administrative-type work.
   b. skilled and semi-skilled work.
   c. supervisory and professional-type work.
   d. a combination of varied tasks.

12. Some of the equipment used for landscaping and nursery work would include primarily: ____
   a. heavy equipment.
   b. irrigation equipment.
   c. hand tools, trucks, and tractors.
   d. automatic equipment.

13. Planting sketches are usually prepared by: ____
   a. civil engineers.
   b. propagators.
   c. landscape architects.
   d. automatic equipment.

14. Nurseryman, as defined by the American Nursery Association, is: ____
   a. a groundskeeper working year round.
   b. a landscaper.
   c. a businessman.
   d. a farmer.

15. To start a landscape-nursery would be: ____
   a. less expensive if it were a service type.
   b. very easy.
   c. impossible with today's prices.
   d. very expensive because of land devaluation.

LANDSCAPE-NURSERY

Achievement Test Answers Master

Question	Answer
1	D
2	A
3	B
4	A
5	C
6	B
7	B
8	B
9	D
10	B
11	D
12	C
13	C
14	C
15	A

Main sources of information used in developing test:

Employment studies
Career Summary S-37 - Nurseryman
Job Guide G-5 Groundskeeper
Career Brief B-180 Landscape Maintenance Supt.
Pub. Something Worth Doing
Pub. Career As A Landscape Expert
Slide-tape series by U.R.I.

LANDSCAPE-NURSERY

Interest Inventory

1. Repair landscape-nursery equipment
2. Propagate plants at a nursery
3. Work as groundskeeper for a landscape-nursery
4. Operate cultivating equipment at a landscape-nursery
5. Work in the greenhouse at a landscape-nursery
6. Drive a truck hauling trees and shrubs for a nursery
7. Prune, ball, and burlap trees and shrubs at a nursery
8. Deliver turf to landscaping outfits
9. Price and tag nursery items
10. Keep books and records for a landscape-nursery
11. Type out purchase orders and correspondence for a landscape-nursery
12. Handle ordering of supplies at a landscape-nursery
13. Handle orders and sales at a landscape-nursery
14. Take care of wages and payrolls for a landscape-nursery
15. Handle customer complaints, problems, and returns of nursery item sales
16. Design landscape plans as a landscape architect
17. Design parks and recreational areas
18. Teach landscape-nursery at a college or university
19. Select placings for trees and shrubs
20. Work for an extension as a specialist in nursery problems
21. Supervise crews of nursery workers
22. Manage office workers at a landscape-nursery
23. Own and manage a small service nursery of your own
24. Take care of business transactions with other nurserymen
25. Hire semi-professional and professional help
26. Schedule work for employees at the landscape-nursery
27. Supervise landscaping operations
28. Supervise transplanting, seeding, and fertilizing at a nursery
29. Manage crews spraying and irrigating plants
30. Supervise mail-order nursery outlets
31. Supervise "breaking in" of new employees in landscape-nursery work
32. Manage potting crews for a large nursery
33. Manage rental of land for nursery plantings
34. Supervise taking of inventory of nursery stock
35. Own a tree service business
36. Manage landscape construction crews
37. Manage landscape field work
38. Contract for landscape work
39. Supervise establishing of lawns
40. Manage crews establishing grades and drainage

LANDSCAPE-NURSERY

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 9 Semi-skilled

10 - 15 Clerical

16 - 20 Technical or Professional

21 - 40 Management or Supervisory

CAREERS IN LANDSCAPE-NURSERY

Slide	Description	Script
1	Title slide	The maintaining and improving of the environment is a job for everyone's concern. This is especially so for the men and women with the careers in Landscape-nursery. A look at some of the 1,400 R.I. workers and their skills.
2	Landscapers working around the home	Workers in the landscaping and nursery business serve the public by improving the surroundings of homesites and business property, school campuses, and church grounds,
3	Open area	and municipal parks, roadside rests, or any open area. Residential planning programs are also using the services of the landscaper to a great degree.
4	Group of men	Many varied and exciting careers are open to the person with imagination, creativity, and love of the outdoors; and there are usually close relationships between employer and employee.
5	Man checking plants	The landscape worker must be able to identify plants and shrubs for specific uses. He also must understand the principle of color and design. Many times he or she must help the customer in picking out the right plant.
6	Men working in nursery	He also must understand the principles of plant growth and planting techniques to insure the best results.
7	Students	Many times high school and college students are hired to help plant and do general landscape-nursery work.
8	Man working	The landscape worker will learn to safely operate many machines for many uses. Often, he will need to use cement mixers in working on patios, sidewalks, or walls
9	Machinery	Many landscaping companies employ heavy equipment operators to run and maintain backhoes, graders, bulldozers, or as in this case, tractors and trucks.

Slide	Description	Script
10	Men working	Digging, balling, and burlapping plants are important skills all landscape-nursery workers must know.
11	Man checking slats	He or she must also be skilled in protecting plants from adverse weather conditions and understand the watering and care of plants.
12	Repairing a cultivator	The use of machinery is an important part of the nursery business. Sprayers, dusters, and cultivators are a few of many machines used.
13	Sprayer	Using the proper amounts and type of fertilizers is vital to know as well as the proper calibration or setting of the fertilizer spreaders and liquid application sprayers.
14	Tractor plowing	The two-way plow is a handy tool in breaking up the sod in preparation for planting. Skill in using the tractor and plow is vital.
15	Man propagating	Propagating and transplanting cuttings are a tricky business requiring many months or even years of practice.
16	Man propagating	The plant propagator is another person in the landscape-nursery business. The propagator starts plants and develops them to the point of transplanting.
17	Variety of plants	Breeding plants may also be a skill required of the propagator, along with the ability to correct nutrient deficiencies and control diseases and pests.
18	Soils lab	It is the responsibility of the propagator to take soil samples to insure proper soil preparation. Good record keeping may also be a necessary skill.
19	Inside shop	The safe use of hand tools, such as knives, hammers, and saws, are important as well for the landscape-nursery man to know.
20	Field shot of foreman	The foreman of a landscape-nursery business may have several different tasks. Usually, he supervises crews of workers, helping them to do efficient work.

Slide	Description	Script
21	Worker with mower	The foreman must be familiar with all machinery and its maintenance and repair. He must understand and coordinate times of planting and plant cycles.
22	Shot of office	Being in charge of other workers means the need to get along well with other people as he may be hiring and training employees.
23	Office (owner)	The landscape-nursery business is one of the few left where a person can start his own business with a relatively small amount of capital. Often, the owner-operator takes on the dual role of foreman and manager.
24	Office worker	The owner must be proficient at keeping good records (tax records, employee records, and business records). He is the one who handles advertisement and promotion. Years of experience are required for this job which often includes high school work experience.
25	Man working on construction site	The owner manages construction and maintenance of buildings and facilities. Making job estimates and setting prices must also be done by the owner.
26	Office shot of architect	Often the landscaper must work from the plans developed by the landscape architect.
27	Man inside garden center	Many landscape-nurserymen operate their own garden center business. Some of these employ a garden center manager to oversee sales personnel and order and keep track of inventory.
28	Garden center salesperson	The garden center salesperson is responsible for meeting the needs of customers, contractors, and homeowners and advising do-it-yourselfers in selecting and planting trees, shrubs, and the use of fertilizers and materials.
29	Variety of plants	The salesman must be able to identify everything that is sold and have a general knowledge of its use.

Slide	Description	Script
30	Girl in office	Clerk-typists are needed in the business who can spell plant names and have a knowledge of the terminology and, of course, pay attention to details and work well with people.
31	Sod in field	"Green is the color of life in our environment and a healthy, beautiful environment is the goal of landscape-nursery businesses."
32	Title slide	It is hoped that this presentation has revealed the many opportunities for landscape-nursery careers in this growing area of Agribusiness and Natural Resources.
33	Credit	Compiled by: University of Rhode Island Career Education Project Resource Development Education

Informational Material	Publisher
Growing Ornamental Plants in Containers Bulletin # 197	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Planting or Transplanting Trees and Shrubs Circular 142	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Land Cover Types of R. I. and Ecological Inventory Bulletin 409	Agricultural Experiment Station University of Rhode Island Kingston, RI 02881
Landscape Planning for the Home Ground Bulletin # 167	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Mixed Oak Forest Floor: Some Characteristics Bulletin # 407	Agricultural Experiment Station University of Rhode Island Kingston, RI 02881
Landscape Development	Mutual Help Housing *B.I.A. *P.H.S. *P.H.A. U.S. Department of the Interior Washington, DC 20240
Landscape Design-Student Handbook Volume 9 #35	Agricultural Experiment Station Dept. of Agricultural Education Pennsylvania State University University Park, PA 16802
Transplanting Ornamental Trees and Shrubs Home and Garden Bulletin # 192	U.S. Department of Agriculture Washington, DC 20250
Growing Boxwoods Home and Garden Bulletin # 120	U.S. Department of Agriculture Washington, DC 20250
Growing Ground Covers Home and Garden Bulletin # 175	U.S. Department of Agriculture Washington, DC 20250
Care & Selection of Trees in Rhode Island Bulletin # 180 Reprint	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Protecting Woody Ornamental Plants in Winter Bulletin #173 Reprint	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Growing Ornamentals in Urban Gardens Home and Garden Bulletin #188	U.S. Department of Agriculture Washington, DC 20250

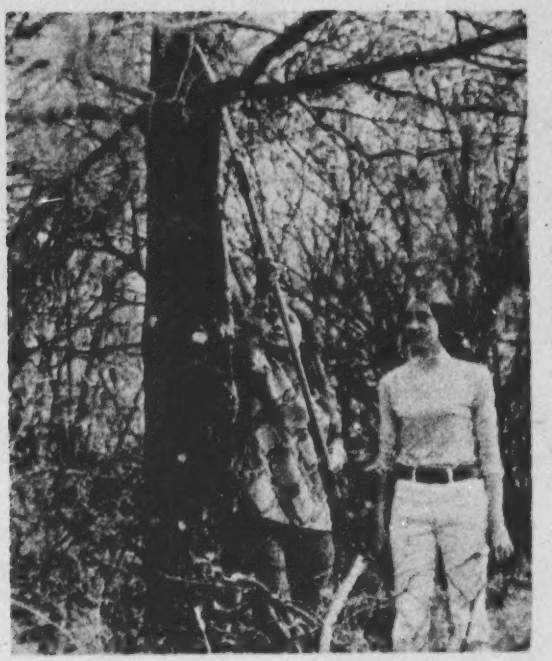
Audio-Visual Material

U.R.I. Slide-tape series:

"Careers in Landscape-Nursery"

GUIDELINES FOR

CAREERS IN RESOURCE CONSERVATION MANAGEMENT



RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

RESOURCE CONSERVATION MANAGEMENT

INTRODUCTION

Management, enforcement, and research of our natural resources are extremely important. Resource Conservation includes all of our resources - agricultural, coastal, fish and wildlife, and forests. Careers with conservation of our resources are numerous. Biologists, engineers, conservation officers, park managers, foresters, skilled laborers, and many other personnel are employed by our Department of Natural Resources and governmental environmental agencies.

National trends show increases in employment needs for Resource Conservation Management. More workers are needed in certain areas, but the major needs are for more trained people in park management, park planning, and enforcement. Opportunities exist, those students who like working in and out of doors and have a growing interest in our natural resources should be encouraged to investigate the possibilities. Planning and experience should start early, perhaps through high school work experience programs. After high school, there are many two to four-year college programs for advanced training.

OBJECTIVES

In grades seven to nine, students should have the opportunity to explore the career possibilities in Resource Conservation. If they have an opportunity to learn about the occupations, such as game manager, park police, enforcement officer, wildlife biologist, and service forester, perhaps their career interests will grow and develop. Perhaps also with greater knowledge and understanding of Resource Conservation careers will come more appreciation for the efforts of those who serve in this field.

1. Students will identify and describe at least one occupation associated with the major types of businesses in Resource Conservation.
2. Students will describe the lifestyle of at least one worker in Resource Conservation.
3. Students will identify at least five different items used by workers in Resource Conservation.
4. Students will demonstrate at least one skill associated with one of the occupations of their interest in Resource Conservation.
5. Students will depict the basic education and experience necessary for one occupation identified for each major type of business.
6. Students will determine at least one activity with a career in Resource Conservation.

Below is a list of the major businesses and agencies in Resource Conservation Management along with a list of the major occupations

I. Types of Businesses

Environmental agencies and laboratory
Department of Natural Resources
Institutions (universities)
Private firms (e.g. lumber companies)
Fish hatcheries
Wildlife reserves, management areas
Environmental organizations
Agricultural extensions

II. Major Occupations

Skilled/Semi-skilled

Carpenters
Mechanics
Patrolman
Equipment operator

Management/Supervisory

Division chief
Resource manager
State conservationist

Clerical

Secretary
Typist
Bookeeper

Technical

Engineers
Lab technicians
Radio technicians

Professional

Biologist
Plant pathologist
Agronomist

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Divide the unit into areas according to the "occupational levels" and class interest and teach some of the basic skills and competencies required for the jobs. Make use of demonstrations.

2. Students plan and develop an outdoor nature trail.

3. Students, by group, research and report on various career opportunities in conservation.

4. Arrange for tours to various resource management areas within the state.

5. Arrange for various resource personnel to visit the school to talk to students and make recommendations for conservation projects possible to implement at the school.

6. Have each student develop a career notebook which would be of value for future reference. (Include all pertinent information.)

7. Have students develop a series of photos on conservation practices and misuses of our natural resources. (Have available for future use)

8. Make use of the many available audio-visuals and av program.

9. Have students follow up current news articles on land use and misuse. Explain the situation, discuss, and relate how a certain misuse trend could be changed.

10. Have students try to develop, as a class, a game for younger levels on careers in resource conservation.

11. Have each student set up and actually initiate a conservation project around his home under the supervision of his instructor.

12. Develop informational centers or displays on careers for the use of others in your school.

13. Have students practice interviewing, as an employer, and have candidates acting for a particular career position in resource conservation. (Use of role playing)

STUDENT LEARNING EXERCISES

I. Preventing Soil Loss Demonstration

Objective:

The following student exercise is designed to demonstrate the effectiveness of various conservation practices in preventing soil erosion. Completing this exercise should have enabled students to observe how planting a cover crop, mulching, or contour farming can decrease soil loss.

Materials:

2 flats containing soil
1 three foot section 2 x 4
Jar or catch basin
Sprinkler or waterer

Procedure:

1. Fill both boxes with soil taken from the same area. Fill sprinkler for later use. (Use equal amounts)
2. Set them on a table with a stack under one end to form a slope. Place a jar under the spouts to catch run-off.
3. Box A use to demonstrate good conservation practices and Box B for poor conservation practices.

Box A	Box B
1 Mulch-over soil	1 Barren soil
2 Contour furrows	2 Straight furrows
3 Cover crop used	3 Barren soil

4. Discuss and explain the results.
5. Can modify this exercise for outdoor use if you wish.

Associated Careers:

Soil conservationist, soil scientist, engineer, agronomist

* Idea credit: Pen State publications

II. Developing an Outside Natural Laboratory

Objectives:

To have students experience various career tasks while developing an outside nature laboratory

Materials:

Materials on land judging and classifying
Field guides for plants and wildlife
35mm camera and film
Markers
Soil test kit
Maps and mapping tools

Procedures:

1. Survey or stake out by measurement a tract of land, preferably 50' x 50' (minimum).
2. Determine or classify the land area you're working with. (field, forest, swamp, etc.) (flat, level, rocky) (productive, barren) List classifying characteristics from general to specific and note any natural and manmade features or resources.
3. Determine the major types of trees or vegetation in the area. Identify, tag, and label on the site at least one species of each.
4. Note and identify any natural features in the area which indicates its history or prior use.
5. Determine the wildlife in the area and identify and label evidence of such when possible.
6. Determine the "problems" associated with the area (any). If possible, obtain samples or photographs (e.g., insects, disease, erosion, pollution, etc.)
7. Take a soil test or a soil profile sample or a perc test on the site. Record results.
8. Determine what is the area suitable for.
9. Sketch a brief map of area.
10. Have students tour each area, and have the group responsible for this area explain highlights of the area.

Associated Careers:

Wildlife conservationist, soil conservationist, plant materialist, wildlife biologist, service forester, and manager

RESOURCE CONSERVATION MANAGEMENT

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. Career opportunities in Resource Conservation Management include work in: _____
   a. office and research.
   b. field and laboratory.
   c. all of the above
   d. none of the above

2. There are career opportunities in Resource Conservation Management: _____
   a. just for men.
   b. for both men and women.
   c. just for women.
   d. There are no opportunities.

3. A college degree: _____
   a. is essential for almost all conservation careers.
   b. is not important to have for any careers in conservation.
   c. is not essential for many careers in Resource Conservation.
   d. is preferred and required in addition to high school and two-year technical school training.

4. Conservation of natural resources, such as our wildlife, land, forests, air, and water, means: _____
   a. using our resources wisely.
   b. preserving and not using our resources.
   c. keeping our resources from industry's use.
   d. all of the above

5. For a successful career in Resource Conservation, it is necessary that an individual: _____
   a. like office work.
   b. like working out of doors.
   c. like working on a range.
   d. like working alone.

6. Most of the conservationist's work is with farmers and ranchers, but his work with people in urban or city areas is: _____
   a. still not changing.
   b. decreasing.
   c. increasing.
   d. not known.

7. Ecologists are resource conservation people who study: _____
   a. the relation of soil to water.
   b. the interrelations of plants and animals.
   c. the relation of shrubs and forests.
   d. primarily birds.

8. Nearly _____ of our nation's land surface is covered by forests. ____
   a. one-half
   b. two-thirds
   c. three-fourths
   d. all

9. Protection and improvement of the nation's public and private forests are the jobs of the forester. The forester may be working: ____
   a. with farmers and large timber companies.
   b. in national parks.
   c. both a and b
   d. solely for himself.

10. A most important task of fish and wildlife specialists is: ____
   a. to take water samples.
   b. to improve fish and wildlife habitat.
   c. to check for pollutants.
   d. to keep people off of the land.

11. The soil scientist studies: ____
   a. soil excavation.
   b. soil properties and their uses.
   c. soil law.
   d. none of the above

12. Laws and economics of legal rights and resource use are a part of resource conservation and are enforced by: ____
   a. the soil scientist.
   b. the conservation officer.
   c. the agronomist.
   d. the public.

13. There _____ job opportunities as "informationists" in resource conservation (publishers, writers, photographers). ____
   a. are not
   b. are
   c. may be but are not now
   d. are limited

14. Which is not a primary job or responsibility of the fish biologist? ____
   a. Food needs and nesting habits of fish
   b. Maintaining ecological balance of all wildlife
   c. Investigating pollutants to fish
   d. Stocking

15. Marine and oceanography _____ considered to be a part of resource conservation. ____
   a. are not normally
   b. sometimes are
   c. are areas
   d. are never

RESOURCE CONSERVATION MANAGEMENT

Achievement Test Answers Master

Question	Answer
1	C
2	B
3	C
4	A
5	B
6	C
7	B
8	A
9	C
10	B
11	B
12	B
13	B
14	B
15	C

Main sources of information used in developing test:

Employment studies
Publication - Careers in Conservation
USDA GS-5 and GS-7
Penn State - Guidelines for Environmental Sensitivity
Career brief
Slide-tape series purchased
U.R.I. Slide-tape series:
"Careers in Resource Conservation Management"

RESOURCE CONSERVATION MANAGEMENT

INTEREST INVENTORY

_____ 1. Help tag and label wildlife
_____ 2. Collect field samples for identification and analysis
_____ 3. Inspect and identify wildlife killed
_____ 4. Repair tools and equipment used for conservation practices
_____ 5. Repair small equipment
_____ 6. Repair marine craft used by the Department of Natural Resources
_____ 7. Plant trees, clean up beaches for natural resources
_____ 8. Purchase necessary supplies for governmental conservation office
_____ 9. Be responsible for storeroom supplies for a private firm in conservation
_____ 10. Type out letters and purchase orders for a division of natural resources
_____ 11. Make appointments, do typing for a division chief
_____ 12. Handle ordering and stocking of storeroom supplies
_____ 13. Maintain office files at a pollution control laboratory
_____ 14. Handle phone calls and arrangements
_____ 15. Purchase supplies and general office
_____ 16. Analyze and keep records for a conservation agency
_____ 17. Analyze soil and water samples and keep data on it
_____ 18. Design a dam and waterway to control soil erosion
_____ 19. Operate dispatch and radio equipment at a fire control tower
_____ 20. Audit books and records
_____ 21. Write articles on wildlife and conservation
_____ 22. Perform duties of a consultant attorney, acting on law cases for Department of Natural Resources
_____ 23. Teach resource conservation to high school students
_____ 24. Supervise groups of conservation workers
_____ 25. Manage the natural resources headquarters in your local district
_____ 26. Serve as a conservation officer (on fire control)
_____ 27. Supervise controlling of plant pests and diseases
_____ 28. Serve as division chief for the Department of Natural Resources
_____ 29. Supervise the control of pests and plant diseases
_____ 30. Act as officer in charge of property control and supply for a division of natural resources department
_____ 31. Supervise marketing of forest products for a lumber company
_____ 32. Manage crews of workers in a forest
_____ 33. Direct a field research project in conservation
_____ 34. Assist in managing crews of workers at a wildlife refuge
_____ 35. Manage a division office in the Department of Natural Resources
_____ 36. Own and operate a lumber company
_____ 37. Direct special research projects in conservation
_____ 38. Supervise a crew of workers in conservation
_____ 39. Manage a crew of heavy equipment operators for soil and water conservation
_____ 40. Supervise operations at a water supply board

RESOURCE CONSERVATION MANAGEMENT

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 7 Semi-skilled

8 - 16 Clerical

17 - 23 Technical or Professional

24 - 40 Management or Supervisory

CAREERS IN RESOURCE CONSERVATION MANAGEMENT

Slide	Description	Script
1	Title slide	In Rhode Island with its innumerable natural resources, Resource Conservation is increasingly popular and important. Opportunities exist in many areas of conservation, those in agriculture, fish and wildlife, forest environment, environmental protection, as well as enforcement and coastal resources.
2	Chart	Nearly 600 workers are employed in the area of Resource Conservation Management; and the potential for job opportunities in the Ocean State is expanding on local, state, and federal levels as funds are made available.
3	Agency list	There are many businesses, agencies and organizations, and states that employ people whose primary concern is in some area of Resource Conservation: fish and wildlife, forestry, air, water, and soil preservation.
4	Galilee Bird Sanctuary	These encompass all areas of the state of Rhode Island's Department of Natural Resources, water testing laboratories, private fish culture companies, wildlife preserves, and organizations such as the Audubon Society.
5	View of a jetty	In the Ocean State one cannot overlook the many conservation businesses and careers associated with the numerous coastal resources.
6	Man on boat	Many workers are involved in marine and oceanography work; and opportunities exist at the professional, management, supervisory, clerical, skilled, and semi-skilled levels.
7	Two men on Dept. of Natural Resources boat	Conservation workers are involved in building and maintaining various boats and nets used by the Department of Natural Resources as well as supervising boatyards and state piers.
8	Hauling in nets	Besides enforcing laws and protecting our coastal resources, conservation workers are also involved in research and rescue. Checking and inspecting shellfish is one of these duties.

Slide	Description	Script
9	Ecology group	Much concern over the environment was demonstrated by ecology action groups.
10	Ecologists	The ecologist studies the interaction of plants and animals and the alternative methods and means of resource use to insure environmental protection for each.
11	Shot of EPA lab outside	Further protection of the environment is insured through the work of private and government agencies. Agencies like the government's E.P.A. (Environmental Protection Agency) employ thousands of specialized workers in laboratories throughout the country to study environmental problems dealing with our soil, water, and air.
12	Inside lab	This lab in Rhode Island employs primarily lab technicians, water specialists, and chemists; but others may employ the biologist, botanist, meteorologists or engineers, and other specialized workers.
13	Lab	From the research and finding of E.P.A. workers and other environmental scientists at colleges and universities, new laws on economics, legal rights, and resource use are developed, which, along with the old, is the duty of the conservation officer to enforce.
14	Officer	The conservation officer may work within any division of the Department of Natural Resources. He may, for example, be on shore, fire, or park patrol.
15	Officer standing by truck	He must be skilled in first aid, handling of firearms, and have a good knowledge of the state and federal laws. It is also essential that he can handle all sorts of problems and complaints, and yet maintain good public relations.
16	Forest view	Nearly one-third of our nation's land surface is covered by forests. Protection, development, and improvement of our nation's public and private forests are the jobs of the forester.
17	Forester and large cut logs	The forester may work with farmers, large timber companies, in national forests or in national parks.

Slide	Description	Script
18	Fire watch	He may work on planting and cutting operations, radio or dispatch, or fire patrol.
19	Officers and group in cutting room	Service foresters and forect technicians are professional foresters. Usually, they have specialized training from a 2 - 4 year college, in addition to several years of on-the-job experience.
20	Two men with book and tools	This provides them with the necessary knowledge and skills to plan and supervise operations, such as mapping forest areas, reforestation, protection of forest and forest wildlife from fire, disease, destructive animals and insects, and cutting and harvesting timber, as well as supervising other forest workers.
21	Semi-skilled worker in a vehicle	In demand also are the skilled and semi-skilled workers who are essential for forestry operations to continue smoothly. Equipment mechanics, carpenters, laborers, aides - all are vital to maintaining good forestry and conservation programs.
22	Manager or chief in office	Much of the forester's time is split between indoor and outdoor work. This is so particularly with forest managers and division chiefs. Here, in the office he may be working on new reforestation plans, fire control measures, or conservation programs. He must supervise and direct the work of other office workers as well.
23	Officer and workers in forest	Often times, it is necessary for the forest manager or division chief to work in the field. He may have to directly supervise crews on a particular project or handle problems and employee complaints. He must, though, as is the case with this manager, like working outdoors and working with people.
24	Talking to group	A good forester strives to coordinate his efforts by cooperating with foresters in his and other divisions. He strives to build good public relations and is frequently called on for talking before groups of people. His job is demanding with relatively long hours. But he is rewarded by a good pay and an even greater satisfaction in his line of work.

Slide	Description	Script
25	Lab worker with tree	Early conservation practices began with early agriculture. An important part of the conservationist's work is related, even today, to agriculture and agricultural industries. Conservation work is needed in both the production and marketing of agricultural products.
26	Two men in a field	Through extension, the conservationist works with farmers and homeowners, supervising and guiding the control of insects, pests, and diseases. Frequently, before making recommendations, he will also consult with the plant pathologist or entomologist.
27	Man making soil test	Often times, he will make soil tests and recommendations, plan, supervise, or actually operate the equipment in a government land development and improvement project.
28	Girl taking soil sample	Soil conservationists are involved with making soil recommendations and handling soil problems. Knowing how to take a soil sample is an important skill which the soil conservationist needs to know.
29	Bulldozer	A major problem to the conservationist is soil erosion. Some natural problems occur but much is caused by excavation.
30	Group of men in a forest	To correct soil erosion problems, important decisions must be made. Often times the soil scientist is asked to analyze the soil properties and potential uses and the agronomist and plant materialist asked to recommend plants which would decrease the erosion problem.
31	Many cars	Other problems of concern to the conservationist are overcrowding,
32	Dump	pollution, and exploitation of our resources. Though much of our resources are renewable, air, water, and land are not.
33	One man with bulldozer and men in background	Checking damage done by oil slicks, beaches and dunes are just some of the many important jobs undertaken by conservation workers.

Slide	Description	Script
34	Ducks	Fish and wildlife specialists have a most important task in Resource Conservation.
35	Man and fish in a boat	of improving the habitat for many fish and wildlife species.
36	School of fish	Fishery specialists are involved in breeding and stocking fish, checking for water pollution, and developing programs for conserving and producing fish and new methods of processing and perserving fishery products.
37	Man speaking on telephone	The fish biologist, for example, must also research the feeding and nesting habits of each species. He must, like the marine and wildlife biologist, be concerned with maintaining a good ecological balance. He spends many hours in the office as well as in the field.
38	Sign	Besides the numerous workers at fish hatcheries, fish research stations, and private fish culture companies, Rhode Island fisheries biologists work also at state wildlife reserves.
39	Tagging and labeling	Here, at the Great Swamp Wildlife Reservation, conservation workers are tagging wildlife for future studies.
40	Geese in flight	Wildlife specialists make studies of the migrations, living places, abundance, habits, and related characteristics of birds, animals, and other wildlife.
41	Group with map	They interpret study findings, give lectures, provide technical assistance to the public, and make recommendations to promote the conservation of wildlife.
42	Taking measurement of a tree	Many professional and semi-professional workers are not unique to conservation work, such as this tree service worker.
43	Wood on truck	Conservation involves the wise use of our natural resources as well as preservation and protection.
44	Camping	It also involves multiple use for industry and parks and recreation.

Slide	Description	Script
45	Park sign	Today, we have over 298 national and many state parks. Planning, managing, and maintaining these areas requires the skills and services of conservation workers such as the park naturalist, park patrolmen, guides, and recreation specialists.
46	Park planner with map	Many community and private recreation areas are needed besides our parks. Conservation work with people in urban and city areas is increasing. Top-notch resource conservationists, such as this recreation specialist, are being asked to help in community planning and development.
47	Fisherman	He must work and advise officials on projects for, in this case, providing areas for camping, swimming, hunting, and fishing,
48	Golfers	as well as many other outdoor sports and activities.
49	Officer	The conservationist's work is never done. Although much has been accomplished, the challenges and opportunities for the professional conservationist to serve his community as well as his agency or organization has never been greater nor more imperative.
50	Conservation worker with group	It is hoped that you have learned that Resource Conservation has many career opportunities for both men and women, full-time and part-time.
51	Lab shot	We've by no means covered all the government and business agencies and jobs that are included in Resource Conservation Management.
52	Man taking sample of tree	Hopefully, though, this has given you a greater appreciation and interest for the men and women that help to preserve and protect our natural resources. You'll have a chance to explore other occupations in this area and even receive some work experience if your interest grows.
53	Career slide	A career in Conservation? ... Well, it depends on you!
54	Compiled slide	Compiled by: Career Education Project Resource Development Education University of Rhode Island

RESOURCE CONSERVATION MANAGEMENT

Informational Material	Publisher
Botany...The Science of Plants	Dept. of Botany University of Vermont Burlington, VT 05401
Career Profiles U.S. Dept. of Agriculture F.S. 308	Superintendent of Documents U.S. Govt. Printing Office Washington, DC 20402
What You Can Do About Water Pollution	Superintendent of Documents U.S. Govt. Printing Office Washington, DC 20402
A Wildlife Conservation Career For You	The Wildlife Society Suite 5176 3900 Wisconsin Ave. N.W. Washington, DC 20016
CAREERS in Wildlife Conservation and Management	Wildlife Management Institute 709 Wire Building Washington, DC 20005
Facts From Our Environment	Potash Institute of North America 1649 Tulle Circle, N.E. Atlanta, GA 30329
CAREERS in Conservation	Soil Conservation Society of America 7515 N. E. Ankeny Road Ankeny, IA 50021
CAREERS in Wildlife Conservation	Conservation Dept. Olin Mathieson Chemical Corp. East Alton, IL
Opportunities Unlimited	National Forest Products Assoc. Technical Services Division 1619 Massachusetts Ave. N.W. Washington, DC 20036
Selection, Training, and Duties of a Pennsylvania Game Protector	Game Commission Training School P. O. Box 223 Brockway, PA 15824

Informational Material	Publisher
Planning A Career in Fish and Wildlife Management	Rhode Island Dept. of Natural Resources Veterans Memorial Bldg. 83 Park St. Providence, RI 02903
Forest Ecology and You	Society of American Foresters 1010 Sixteenth St. N.W. Washington, DC 20036
Guidelines for Environmental Sensitivity	Pennsylvania Dept. of Education Box 911 Harrisburg, PA 17126

Audio-Visual Material

Cassette tapes (only) on "Forestry" and "Natural Resource Management"

Film (only) "Water Pollution"

Several slide-tape series on Resource Conservation

U.R.I. Slide-tape series:
"Careers in Resource Conservation Management"

U.R.I. Film library

U. S. Dept. of Agriculture

Shell Corporation, Chicago, Illinois

R. I. Dept. of Natural Resources
(Hayes St., Providence, Phone # 277-2784)

GUIDELINES FOR

CAREERS IN MARINE RESOURCES

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

MARINE RESOURCES

INTRODUCTION

In the Ocean State one will not be surprised that many careers can be associated with our ocean and marine resources. Fishermen, researchers, marine enforcement officers, boat building and sales personnel, as well as many boatyard and marine workers, are occupations of those who like working close to the sea.

Trends of growth and development have been evident in the Marine Resources industry. As an example, many marinas have expanded to meet boating needs, creating a demand for many skilled carpenters, mechanics, painters, fitters, riggers, and other personnel.

One can build upon his or her interest in this career area by investigating on-going training programs available after high school. One such program is the two-year school of fisheries and marine technology at the Wickford campus of U.R.I. Offered is training in nets, gears, and navigation, along with practical sea experience.

OBJECTIVES

Advanced planning and preparation in this field is important. Students in exploratory career programs shall be aware of the opportunities and training needed.

1. Students will demonstrate at least one skill associated with one of the occupations of their interest in Marine Resources.
2. Students will identify and describe at least one of the occupations associated with each of the types of businesses in the marine industry.
3. Students will identify five kinds of resources associated with careers in the marine industry.
4. Students will describe the lifestyle of at least one worker in Marine Resources.
5. Students will depict the basic education and experience necessary for one occupation identified for each major type of business.
6. Students will name at least one leisure time activity, such as sport fishing, to a career in Marine Resources.

Below is a list of the major businesses and agencies in Marine Resources along with a list of the major occupations

I. Types of Businesses

Boat and equipment sales
Fishing
Processing
Institutional - research
Enforcement agency

II. Major Occupations

Semi-skilled/Skilled

Riggers
Mechanics
Fitters
Yard workers

Management/Supervisory

Marina supervisor
Foreman
Enforcement officer

Clerical

Secretary
Bookkeeper

Technical/Professional

Owner
Researcher

GENERAL SUGGESTED LEARNING ACTIVITIES

1. As a class project, interview or send forms to a variety of people in marine related businesses asking for job descriptions, educational level, etc., and then compiling and reporting. (Use the NEMRIP letter and format for a guide.)

2. Read and discuss "The Boating Business, 1972," "Boating '72," and "Boating in Rhode Island" and discuss Rhode Island's place in the nation's marine industry.

3. Invite a fisherman to come to the class and speak on commercial fishing and give a demonstration of, e.g., mending nets.

4. Have individuals or groups of students choose among the several informational materials and give an oral summary of the job title of their choice.

5. Visit a Coast Guard station or have a representative visit the class.

6. Visit a marina or boatyard and discuss all of the jobs involved and the employment outlook for each.

7. Visit a large commercial fishing boat to observe how the navigational equipment works, perhaps in conjunction with chart reading exercise.

STUDENT LEARNING EXERCISE

I. Rope and Knot Work: Bowline Knot

Objectives:

Being able to make useful knots is essential for those who work in the fishing industry of Marine Resources. Students should, and will, be able to make at least one knot upon completion of this exercise.

Materials:

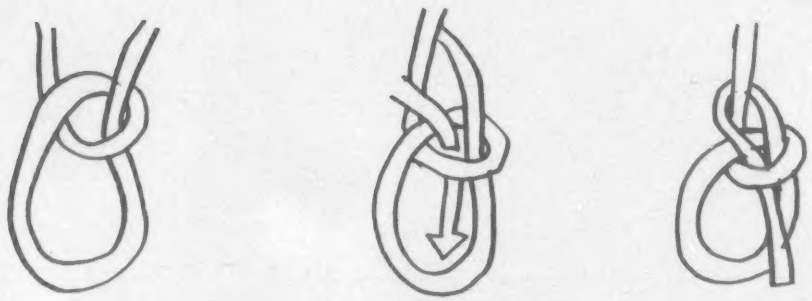
2 two foot lengths of ½" rope
One knife, reasonably sharp
Lashing (tying material), such as string
Any device which could be used in threading

Procedure:

1. Hold one end of one rope in your right hand.
2. Loop this end over the section of rope held in your left hand and down to form a second loop.
3. Bring the end up through the look and then pass it in back of the rope (above the loop) held in the left hand.
4. Bring the end down through the same loop as you passed it through before.
5. Tighten the knot.

Associated Careers:

Fisherman, deckhand



Source: Plymouth Cordage, Auburn, New York

MARINE RESOURCES

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. The number of DIFFERENT boat models under production in the U.S. is over: _____
   a. 1,500.
   b. 2,000.
   c. 2,500.
   d. 3,000.

2. Which of the following job titles are found in the BOAT BUILDING industry? _____
   a. Electrician
   b. Inspector
   c. Fiberglass molder
   d. All of the above

3. Which of the following is NOT a common appeal of boating? _____
   a. Can get away from everyday tensions
   b. Can be near nature
   c. It's inexpensive
   d. It's available to almost everyone, everywhere

4. Which of the following careers would require a COLLEGE DEGREE? _____
   a. Plastics engineer
   b. Rigger
   c. Fiberglass foreman
   d. Engine installer

5. Which of the following working conditions is characteristic of those in the commercial FISHING business? _____
   a. Long, irregular hours
   b. Warm, dry working area
   c. Seasonal job only
   d. None of these

6. Commercial fishermen receive their TRAINING in which of the following ways? _____
   a. On-the-boat experience
   b. Fisheries course at a university
   c. Both a and b
   d. Neither a or b

7. Which of the following is NOT a main reason why a MARINA OPERATOR is in the business? _____
   a. He likes the short hours.
   b. He likes being his own boss.
   c. He likes the monetary possibilities.
   d. He likes the outdoors.

8. Which of the following descriptions is NOT a qualification for the successful businessman in the marine industry? _____
   a. He must give good service to his customers after the sale.
   b. He must be able to deal with customer complaints.
   c. He must enjoy boats
   d. He must be able to perform every skill in his business.

9. One of the KEY principles to success in the marine and boatyard is: _____
   a. Good advertising ability
   b. Shrewdness
   c. Desire to serve customers well
   d. Location near high income area

10. Which of the following businesses would most likely hire a RIGGER? _____
   a. Fishing boat
   b. Shipyard
   c. Marina
   d. All of the above

11. Which of the following is not usually a skill performed by the NAVIGATOR on a fishing boat? _____
   a. Chart ship's course
   b. Operate radar unit
   c. Keep ship's log
   d. Repair the depth sounder

12. Which of the following characteristics is necessary for the CAPTAIN of a fishing boat? _____
   a. Have a thorough knowledge of fishing
   b. Be able to give orders and command respect
   c. Make quick decisions
   d. All of the above

13. Which of the following sources of income is greatest in the marina-boatyard business? _____
   a. Sale of new boats and motors
   b. Sale of used boats and motors
   c. Berthing ship rentals
   d. Repairs, service, and maintenance

14. The commercial fisherman and the marina owner would have which of the following in common? _____
   a. Seasonal work
   b. High capital investment needed to begin operation
   c. Irregular hours
   d. Finances easily available to start the business

15. Which of the following statements best describes the TRENDS in the boating industry? _____
   a. Sufficient marinas exist to handle increased number of boats for many years to come.
   b. Increased boating can be handled by expanding existing facilities.
   c. New and bigger marinas will have to be developed to handle increased boating.
   d. Increased boating will have to be handled by lakes and inland waterways.

MARINE RESOURCES

Achievement Test Answers Master

Question	Answer
1	D
2	D
3	C
4	A
5	A
6	C
7	A
8	D
9	C
10	D
11	D
12	D
13	D
14	B
15	B

Main sources of information used in developing test:

Practices of Boatyard Operation (NAEBM)
The Modern Marina (NAEBM)
Boat Hauling Equipment (NAEBM)
Job Guide G-39, Commercial Fisherman
Career Summary S-251 Rigger
U.R.I. Slide-tape series

MARINE RESOURCES

Interest Inventory

_____ 1. Operate the hoisting device for a fishing net
_____ 2. Sell life jackets and outboard motors
_____ 3. Skillfully paint a yacht
_____ 4. Clean and lubricate electric motors on a ship
_____ 5. Set a fishing net
_____ 6. Discuss specifications of a boat design with a customer
_____ 7. Repair loose electrical wiring on a ship
_____ 8. Refinish the teakwood interior of a yacht
_____ 9. Uses the necessary cables to bring a boat carefully into dock
_____ 10. Make lobster pots
_____ 11. Perform basic marine plumbing
_____ 12. Use hand tools with skill and precision to build a boat
_____ 13. Advise a customer on how to care for his sailboat's rigging
_____ 14. Disassemble sailboats
_____ 15. Operate forklift on a dock
_____ 16. Secure boats to their moorings with the proper knots
_____ 17. Operate the hydraulic equipment on a ship
_____ 18. Recommend to a customer the kind of trailer he needs to transport his boat
_____ 19. Replace some planks in a customer's boat
_____ 20. Haul in a fishing net
_____ 21. Perform basic marine plumbing
_____ 22. Repair fishing vessels and marine craft
_____ 23. Keep a record of the bills for a marina
_____ 24. Prepare tax returns of the workers at a marina
_____ 25. Type correspondence for a marine business
_____ 26. Order supplies for a marina
_____ 27. Navigate a fishing boat's course
_____ 28. Operate a radar range finder on a commercial fishing boat
_____ 29. Read a compass and charts to locate the position of a fishing boat
_____ 30. Install wiring and electrical devices on a ship
_____ 31. Research ocean resources
_____ 32. Check the safety devices on a ship
_____ 33. Hire and train greenhouse workers
_____ 34. Evaluate the quality of workmanship of a ship building crew
_____ 35. Supervise the workers stowing the mooring lines
_____ 36. Steer a fishing boat
_____ 37. Manage a boat rental agency
_____ 38. Determine the price of rigging and boat repair work at a marina
_____ 39. Determine the cost of marine products in accordance with local, state, and federal government regulations
_____ 40. Determine when to give the proper signal for fog and other hazard signals at sea

MARINE RESOURCES

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 22 Semi-skilled

23 - 26 Clerical

27 - 31 Technical or Professional

32 - 40 Management or Supervisory

Music

Slide	Description	Script
1	Title	Presenting a glimpse at careers in Marine Resources. A look at some of the many jobs available in the ocean of Rhode Island. First, we'll look at commercial fishing in Rhode Island.
2	Sea gulls	The number of full and part-time fishermen is probably about 200 in Rhode Island.
3	Break water shot	These men fish out of Jamestown, Block Island, Newport, Stonington, Conn., and Point Judith, as shown here.
4	Fishing vessel going out	Fishermen receive their training aboard a fishing boat and can also take the two-year fisheries program at U.R.I.
5	Fishing vessel at dock	A large amount of experience and money, or capital, are required to own and operate your own fishing boat. A new boat usually costs over $200,000. Finances are usually hard to get also.
6	Nets	A fishing vessel has a captain and a crew of experienced men who can do everything from cook to man nets.
7	Fishing boat unloading	A fisherman must be able to enjoy long and irregular hours in damp, sometimes stormy, conditions, often for days at a time.
8	Fishing boat at dock	But when the trip is over, a good catch makes it all worthwhile. The boat is maneuvered into place at the unloading dock.
9	Workers unloading fish	Dock workers begin putting the fish in baskets. The fish are preserved by being put in ice, in the hole, while they are caught.

Slide	Description	Script
10	Fish in baskets	From this, the fish are put onto conveyor belts and then weighed and either packed for shipping or processed in the near-by plant.
11	Inside of marina	Before we look into the boatyard and marina, let's look at many careers associated with boat building.
12	Yacht	Rhode Island has one of the largest builders of yachts on the East coast. For an inside look, we'll follow the assembly line to see the various procedures involved.
13	Model boat	The first procedure in building a boat is having what is called a wooden plug, or model, made from the designed plans.
14	Side view of mold	This slide shows a fiberglass working mold. This is a long and highly skilled operation.
15	Row of molds	These molds are waxed and painted, and they are printed with a jell coat paint. Then fiberglass was placed on the boat by hand in pieces.
16	Blue mold	The desired hull color can be painted on.
17	White mold	This shows the jell coat paint applied and the interior waxed.
18	Same mold of hull	Here, the fiberglass material is being applied and covered with resin.
19	Same mold	This picture shows balsam-colored wood placed on the deck to protect and reinforce the deck. It is then glossed over with a fine clothlike coat of fiberglass.
20	Assembly line	This shows another part of the boat being added, the interior headliner, which is the last step before the boat is pulled from the mold.

Slide	Description	Script
21	Ribs of boat Workman in boat	Here, a workman moves an interior insert into the hull.
22	Hull and deck assembly	Here, the workman fastens the unit into the hull, the fiberglass material. Electricians, by this time, have already installed the wiring. This shows a suspended deck which is just above the hull, which is just ahead of it.
23	Workman in hull	This workman is cutting away the flange to make the perfect joining together of two pieces.
24	Bow of boat	Here, the deck is tightened together and being tightly secured with fasteners.
25	Red boat on cradle	This boat is sitting on a wooden cradle, which is how the boat is moved. The bottom has been sanded in preparation for a prime coat of paint.
26	Boat going into water	This shows a boat ready to be placed into a test pool, where it will be checked for leaks in various places throughout the boat.
27	Boat in cage	This boat is going through what is called a deck test. This system of pipes and nozzles shoots streams of water at high pressure from different angles, as an inspector walks on the inside checking for leaks in the cabin or other places.
28	Boat in traveler	Larger model boats must be moved by the marine travel lift. This utilizes slings to load it onto a trailer.
29	Back end of boat	This boat is ready for transport. It is still securely fastened to its wooden cradle.
30	Dock with overturned boat	The boating industry is a sales and service business. The dealer's work is just beginning when the sales are made.

Slide	Description	Script
31	Two men	Many careers involve the selling of supplies to the boat owner, such as the wholesale dealers.
32	Boy in red jacket in store	Equipment of all kinds is stocked for distribution to marinas and other outlets.
33	Shopping cart	After an order is made, the stock-room men and package men prepare the items for delivery by truck.
34	Truck	To dealers elsewhere in the area.
35	Marina store	Many marinas and shipyards have marina stores, where everything from life jackets to oars can be purchased.
36	Salesman and woman Salesman with two customers	The marine salesmen must be especially knowledgeable and satisfying to the customers' needs and wishes.
37	Pool	The marina, or boatyard, may also have an accompanying restaurant or pool, as shown here.
38	Boats at slip	A variety of sources of income exist for the marina owner, for example, mooring ships to docks,
39	Boats in shed	Housing ships for the winter,
40	Two men and covered boats	Selling new boats and motors,
41	Scraped hull and ladder	And repairs, service, and maintenance, which is the largest amount of income.
42	Carpenters	Many skilled workers are involved in shipyard operations, for example, carpenters,
43	Man and motors	mechanics,
44	Old man and machine	machinists,
45	Man and bench	and fiberglass men and painters, who are also in demand.

Slide	Description	Script
46	Crane	Heavy equipment is often used to insure the boats, in and out of storage, for repairs and painting.
47	Boat in shed with tracks	Some yards still use a rail system to move boats to places desired.
48	Boat on ramp	These workers are using a winch and a trailer to bring the boat out of the water.
49	Boat from behind	This is a delicate operation that takes an experienced crew to do the job.
50	Man on phone	The marina owner must be willing to put in long hours of unselfish service to make a profit for business. Good businesses are in much demand in marina industry.
51	Boats at slips	There are over 3,000 models of boats in production in the United States today, from canoes to cabin cruisers. The number of marinas today can't meet the demands that large numbers of boats call for in docking, sales, and service.
52	Man in marina store	The person interested in starting a marina will have long hours ahead of him; and, like the fisherman, he may have a hard time acquiring the capital needed to begin the business. Obviously, he must love his work and be serious about being successful.
53	Boats at slips	Boating is America's number one family participant sport. It's available to almost everyone everywhere. People enjoy being out in nature, and for many boating and related fields, this also supplies a great outlet for everyday tensions.
54	Breakwater or open water	So, whether in fishing, boat building, selling, servicing, or marine operations, you may want to investigate and learn more about the numberous and challenging careers in Marine Resources.

MARINE RESOURCES

Informational Material	Publisher
Practices of Boatyard Operation	American Boat Builders & Repairers Association, Inc. 2488 Grand Concourse Bronx, NY 10450
Some Analyses of Fish Prices Bulletin 401	Agriculture Experiment Station University of Rhode Island Kingston, RI 02881
Sailing Is Fun	Committee of the National Association of Engine and Boat Manufactures 537 Steamboat Road Greenwich, CT 06830
Let's Go Boating	Committee of the National Association of Engine and Boat Manufactures 537 Steamboat Road Greenwich, CT 06830
The Boating Industry Volume II	The Boating Industry Conover-Mast Publications Div. Cahners Publishing Co., Inc.
Fisheries As A Profession	American Fisheries Society 1040 Washington Building 15th St. & New York Ave. N.W. Washington, DC 20005

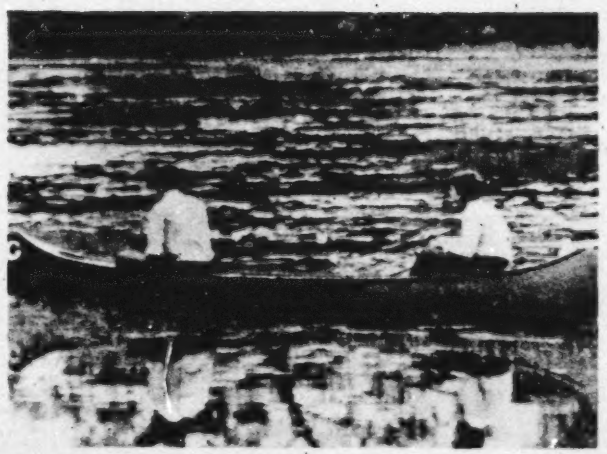
Audio-visual Materials

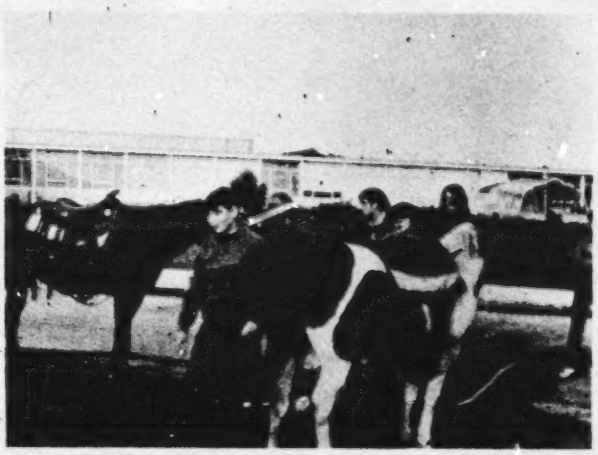
A slide-tape series:
"Careers in Marine Resources"

Film, "Boats Need People," available from N.A.E.B.N. (See order form in Informational Materials folder) or from Creativision Inc., 295 W. 4th Street, New York, New York 10014, FREE.

GUIDELINES FOR

CAREERS IN OUTDOOR RECREATION





RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

OUTDOOR RECREATION

INTRODUCTION

Outdoor recreation is probably the most exciting career field. Many exciting and varied careers are associated with our leisure time activities. For example, park foremen, park managers, park planners, camp counselors, equipment rental and sales personnel, and recreation planners are only a very few of the many workers at the recreation areas we all enjoy. Other jobs are associated with our ski areas, camping areas, beaches, marinas, riding stables, and picnic areas. Many jobs are part-time or seasonal, which provides an excellent opportunity for students to gain work experience. Further career training can be received through special workshops run by local recreation businesses and organizations. Recreation programs at two-year colleges and four-year universities provide opportunity for specialization toward a professional or technical career.

OBJECTIVES

Many people are unaware of the career possibilities in outdoor recreational occupations, perhaps because we think of work and fun as being so far apart. Recreation work sort of-combines the two; it is a growing and dynamic employment field which students in exploratory career programs should consider.

1. Students will identify and describe at least one of the occupations associated with each of the major types of businesses in Outdoor Recreation.
2. Students will demonstrate at least one skill associated with one of the occupations of their interest in Outdoor Recreation.
3. Students will identify five items associated with work in the recreation industry.
4. Students will describe the lifestyle of at least one worker in Outdoor Recreation.
5. Students will list the basic education and experience required for one occupation identified for each of the major types of businesses.

Below is a list of businesses in Outdoor Recreation and a list of major occupations

I. Types of Businesses

Riding stables
Campgrounds
Trailer parks
Equipment sales and service
Boat sales
Ski areas
Private swimming areas
Parks

II. Major Occupations

Skilled/Semi-skilled

Groomer
Sales person
Snow crewman
Lifeguard

Management/Supervisory

Park manager
Camp counselor
Skipper

Clerical

Secretary
Bookkeeper

Technical/Professional

Owner
Recreation specialist
Instructor

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Invite a resource person involved in Outdoor Recreation to your school (preferably during the season of his line of work or time in the school year closest to it). Invite other classes to join in on this day if it can be arranged.

2. Plan a "Recreation Day" whereby students can participate in the recreation offered at the place visited, but also are able to observe the area in operation and the workers in action. (Recreation area, industry-manufacturing recreation items, hospital)

3. For each area, arrange one (or several) day when students (and instructor) can bring in as much recreation equipment as possible. Cover the facts related to each item. (Cost, maintenance, features, purpose, etc.) (e.g., outboard motor, saddle, surfboard, fish and camping gear)

4. Have students bring in some pictures of themselves and friends at all ages involved in recreation activities. Let them discuss their experiences.

5. Students may wish to organize their own recreation, maybe even to the extent of teams.

6. Divide students into groups according to areas of interest in various recreation activities. By groups, or as a whole, they could work on the following projects.

   a. Recreation - Informative displays in school and own classroom.
   b. Send away for information (e.g., camping guidelines from various states). Set up an area for this information to be available for use of the student body.
   c. Set up a school store or fund on recreation items.
   d. Develop a recreation program for their school or a recreation area on the schoolgrounds, e.g., nature trail, picnic area, etc.
   e. Develop a game related to recreation.
   f. Submit a newspaper article with photos.
   g. Develop a notebook which contains photos, news clippings, copy pamphlets, brochures, maps, and complete set of information.
   h. Work on a school assembly program (educational, professional, and student entertainment).
   i. Make their own slide-tape series on an area.
   j. Design new equipment and explain to class or actually make (through cooperation of shop teachers) an actual item (e.g., hockey stick, ticket booth, etc.).
   k. Students plan and lead a group of younger people in some recreation for one day.
   l. Plan a class cookout (students responsible for all arrangements).
   m. Plan for a booth in a fair, community area, or talk before an organizational meeting.
   n. Reports/papers (include, for example, developing a recreation schedule, along with what recreation is, what recreation means, what jobs are available, and what problems there are).

7. Have students survey and determine recreation needs in their community (what's there, what's needed, what's being done, what could be done).

8. Organize part-time or summertime supervised work for students and/or promote each; becoming involved in any recreation program offered.

STUDENT LEARNING EXERCISE

I. Planning a Recreation Business in the School Community

Objective:
To introduce the student to the task of planning, developing and operating a recreational business as owner-manager.

Materials:
Graph paper
Local map
Information materials on school and community (May develop your own from surveys)

Procedure:

1. Divide class by interest into several groups according to the kind of outdoor recreation business they would like to develop in the state. (E.g., ski slope, camping area, motorcycle trail or track, riding stable, marine recreation, park, etc.);
2. Guide the students' thinking as to how to go about the major steps in beginning the business.

One part of each group:

a. Select suitable land or water areas.
b. Determine facilities and demand for such a business. Proximity to potential users.
c. Locate existing recreation areas or businesses.

Another part work on legal and financial factors:

d. Permits needed
e. Available labor
f. Initial capital investment
g. Operating costs
h. Health and sanitation regulations
i. Insurance and taxes

j. Still another part of the group could design a promotional brochure describing this hypothetical business (or an existing local business).

3. Part of the group could then actually design the recreational business and the surrounding areas along the guidelines of blueprint form.

   Any other consideration of problems should be discussed.

4. A final written report would then be submitted containing the best recommendations (and the basis for such recommendations) for the establishment of this hypothetical recreation business. The instructor and students should then review and discuss the report in class. Consideration should also be given to the question: What (if any) of the ideas, information, etc., in this report could we use toward furthering recreational development in our home area, school area, and local community?

Associated Careers:
Recreation specialist, owner-manager of a recreational business

OUTDOOR RECREATION

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. Most employees for various jobs in Outdoor Recreation prefer to hire: _____
   a. high school students participating in sports.
   b. high school graduates with part-time jobs.
   c. school teachers during the summer.
   d. college graduates majoring in Social Science, recreation, or physical education.

2. Outdoor recreation: _____
   a. is only seasonal and includes few activities.
   b. is decreasing because too much land is used for it already.
   c. is provided on public and private lands.
   d. is provided only by non-profit organizations.

3. The number of pleasure horses in Rhode Island is: _____
   a. increasing.
   b. decreasing
   c. remaining the same.
   d. zero.

4. Work at a ski area is: _____
   a. paying a below minimum wage.
   b. mostly summertime work.
   c. most often seasonal work.
   d. dependent upon natural snow.

5. In Rhode Island there are approximately _____ workers in Outdoor Recreation. _____
   a. 1,150
   b. 1,250
   c. 1,350
   d. 1,450

6. The number of community recreation programs has been _____ in the past ten years. _____
   a. decreasing
   b. remaining the same
   c. fluctuating
   d. increasing

7. One most likely <u>would</u> <u>not</u> find working at a ski area: _____
   a. lift operators and snack bar attendants.
   b. equipment repairmen, ticket collectors, and snow crewmen.
   c. instructors and first-aid personnel.
   d. grooms and mates.

8. Which of the following statements is INCORRECT concerning the "nature" of recreation work? _____
   a. Recreation workers usually work along with groups and individuals.
   b. Recreation requires a forty to fifty hour workweek.
   c. Recreation workers are solely concerned with organizing group activities.
   d. Recreation work is available in industry, the community, public schools, government, and hospitals.

9. At a modern riding and boarding horse ranch: _____
   a. overnight rides are offered.
   b. amphitheater shows are held occasionally.
   c. people often purchase tack and equipment.
   d. all of the above

10. For a job in marine recreation, it would be better to live: _____
   a. in northern Canada than in Florida.
   b. on the East Coast than in the Midwest.
   c. in Texas than in Missouri.
   d. in Arizona than in New Mexico.

11. Bicycling, or bicycle riding, seems to: _____
   a. be a thing of the past.
   b. be physically harmful.
   c. be a returning recreation.
   d. be more expensive than trailbiking.

12. Some common marine sports occupations in Rhode Island would include all of the below except: _____
   a. shellfish sales and trawling.
   b. skiing instructors and surfing equipment sales.
   c. lifeguards and party boat captains.
   d. repairing sailboats, motorboats, and ferrys.

13. You would most likely not meet a _____ at a summer camp. _____
   a. recreation leader or counselor
   b. college student or teacher
   c. policeman or park patrolman
   d. scoutmaster or cook

14. Of major concern to an owner setting up an outdoor recreation area is: _____
   a. getting enough part-time help without hiring high school students.
   b. getting enough government land.
   c. zoning laws and insurance.
   d. obtaining equipment and supplies.

15. Which statement below would be INCORRECT concerning education and a career in recreation? _____
   a. Over sixty junior colleges offer programs in recreation with a wide range of courses available.
   b. More than one-half of today's recreation workers have the education employers desire.
   c. Advanced courses in public administration and masters programs are desirable for administrative positions in recreation.
   d. The time to start planning for a career in recreation is while you're still in high school.

OUTDOOR RECREATION

Achievement Test Answers Master

Question	Answer
1	D
2	C
3	A
4	C
5	C
6	D
7	D
8	C
9	D
10	B
11	C
12	A
13	C
14	C
15	B

Main sources of information used in developing test:

Employment studies
Career Brief 195
Career Summary S-247
Bulletin 1700-44 Employment Outlook for Recreation Workers
Publication: "Where The Action Is"
U.R.I. Slide-tape series: "Careers in Outdoor Recreation"

OUTDOOR RECREATION

INTEREST INVENTORY

_____ 1. Operate a ski lift
_____ 2. Groom and care for horses
_____ 3. Work as a lifeguard in a public swimming area
_____ 4. Serve as mate on a sport fishing vessel
_____ 5. Clean a bathhouse
_____ 6. Cut bridle paths under the direction of a ranch foreman
_____ 7. Do custom welding on recreation equipment
_____ 8. Sell food and beverages at a recreation area
_____ 9. Handle rentals of skis and skiing equipment
_____ 10. Keep books and records for a ski lodge
_____ 11. Order and inventory supplies for a bridle and tack shop
_____ 12. File receipts and disbursements for a sailboat sales firm
_____ 13. Work in the office of a summer resort
_____ 14. Order supplies for crews of workers in recreation
_____ 15. Design recreation equipment
_____ 16. Give professional skiing instructions
_____ 17. Give instructions to classes on riding and caring for horses
_____ 18. Direct a summer camp
_____ 19. Manage a recreation area
_____ 20. Maintain and keep grounds for a golf course
_____ 21. Lead a boy scout or girl scouts group
_____ 22. Manage a riding and boarding stable
_____ 23. Arrange for country-western shows
_____ 24. Supervise community recreation programs
_____ 25. Supervise clean-up crews at a picnic area
_____ 26. Manage a bicycle repair shop
_____ 27. Supervise a small marina
_____ 28. Supervise a state park for the Department of Natural Resources
_____ 29. Supervise boat maintenance and repair crews
_____ 30. Supervise the planning and developing of a recreation area
_____ 31. Manage a pro shop for a local country club
_____ 32. Manage insurance sales for outdoor recreation
_____ 33. Manage a campground and trailer park
_____ 34. Own a public recreation area
_____ 35. Manage snowmobile sales and service
_____ 36. Manage a golf course or country club
_____ 37. Mangge park restoration crews
_____ 38. Manage a large dining hall at a recreation inn
_____ 39. Buy, train, and sell horses
_____ 40. Own your own farrier business

OUTDOOR RECREATION

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 8 Semi-skilled

9 - 14 Clerical

15 - 17 Technical or Professional

18 - 40 Management or Supervisory

CAREERS IN OUTDOOR RECREATION

Slide	Description	Script
1	Beach shot	*Many of our recreation facilities that are provided on our public and private lands serve to enable us to relax from our everyday tensions and enjoy our leisure time.
2	Beach shot	*Today, with improved travel, an increasing population and more vacation time... there is the demand for more recreational areas and recreation personnel.
3	Beach	*In Rhode Island, besides our many state beaches, parks, and picnic areas provided by the Department of Natural Resources,
4	Recreation business	*we have more than 83 private businesses whose own business is outdoor recreation.
5	Man in ski shop	*Involved with camping, skiing, marine, and other outdoor recreation areas are
6	Patrolman	*more than 1,300 recreation workers, semi-skilled to professional.
7	Ski shop worker	*Presenting a glimpse at some of the areas, businesses, and workers in a growing area of Agribusiness and Natural Resources in Rhode Island -
8	Title	*Outdoor Recreation.
9	Skiers on slope	*Skiing is one of the favorite winter sports in Rhode Island. Slopes at Alpine, Diamond Hill, Pine Top, Yawgoo, and Ski Valley provide fun for the whole family.
10	Skiers using beginner's tow	*Here, beginners get their first lesson from an instructor. The ski instructor must be a competent skier and be able to work with people. A lesson may cost anywhere from $10 to $15.
11	Snow making machine	*Maintaining the slope is the job of the snow and slope crewmen. This involves making snow as well as packing and grooming operations.
12	Tow lift	*Some slopes are over a mile long and rise to approximately 400 feet high. On most of the larger slopes,

Slide	Description	Script
13	Chairlifts	*lifts have been installed to provide transportation to the top.
14	Lift operator	*The lift operator is responsible for the safe transportation of skiers to the top of the slope.
15	Groomer	*Other equipment used at the area are rollers, groomers, and towlifts. These require the services of maintenance men and mechanics.
16	Ski shop sales	*In the ski shop, sales, service, and rental
17	Man with ski	*of ski equipment is carried out.
18	Refreshment stand	*Cafeteria, parking, and ticket attendants all help in running a successful ski slope operation.
19	Manager	*Clerks and bookkeepers keep track of payrolls and property while the owner or manager keeps a watchful eye over the entire operation.
20	Winter scene	*Other winter sports activities in Rhode Island include skating, sledding, ice fishing, hunting, and most recently,
21	Snowmobile	*snowmobiling. Snowmobiling is a growing sales, rental, and service recreational business in the state. The cost may be anywhere from $5 per hour rental to owning your own machine for over $1,000.
22	Camping area	*Much snowmobiling, like other winter sports, is done at the state parks and recreation areas. These areas are managed by the Department of Natural Resources, Division of Parks and Recreation. More than 300 personnel are employed by the Division and most work is yearround.
23	Park manager	*Parks provide also for many summertime-fun activities. A park may have included areas for camping, swimming, picnicking, boating, and golfing. Responsible for the park, regardless of the season, is the park manager, who under the supervision of the superintendent of parks, directs all projects and work done.

Slide	Description	Script
24	Park foreman	*Park foremen are directly in charge of various crews of park workers, such as the general laborers, construction and repair crews, and park caretakers.
25	Laborers	*Many workers are hired for working at park and recreational areas on a seasonal and/or part-time basis. Laborers, mechanics, attendants, and special area managers are hired to meet the season's demands.
26	Beach	*During summer months, thousands of Rhode Islanders use our state beaches. On hand besides the maintenance crew of bathhouse attendants and general laborers
27	Lifeguard	*is the lifeguard. As required by the state law, the lifeguard must be certified and on duty at all times while the beach areas are open. He must be a good swimmer, skilled in first aid and life-saving techniques, and
28	Closeup of people on beach	*capable of assuming responsibility of safely guarding the lives of people of all ages. Safety, maintenance, and supplies are also important to the functioning of outdoor recreation.
29	Camping	*Camping is a favorite individual and family recreation activity. But camping is as much a business as it is a sport.
30	Kitchen	*Camping requires the services of most everyone from general laborers, attendants, groundskeepers, or kitchen help as shown here:
31	Meeting	*to the counselors and directors who oversee the entire operation.
32	Inside work shop	*Most camp work is seasonal but some jobs do remain the yearround. For example, maintenance and repair crews stay on the job for the entire year.
33	Inside camp store	*Associated with camping is the sales and service business of the camp store where one finds everything from backpacks to tents.

Slide	Description	Script
34	Office/clerk	*This, along with other camping businesses, require the skills of many office, sales, and supervisory personnel as well as skilled and semi-skilled workers.
35	Manager with trainee	*Most workers and managers are willing to hire and train high school graduates and cooperative work experience students for seasonal or full-time positions.
36	Camping area	*In Rhode Island, we have approximately 20 camping areas, campgrounds, and trailer parks.
37	Camping area	*Many of these facilities like this trailer park are still expanding and increasing to meet the seasonal demands.
38	Tennis court	*Many areas, in doing so, are combining facilities for other activities besides just camping.
39	Camper	*Camping seems to be for most anyone, any age. For older folks, it's dragging the trailer along, essentially a home on wheels, to a trailer park to enjoy and relax in good fellowship but yet close to nature.
40	Tents	*For the younger generation, it's either traveling with Mom and Dad, pitching a backyard tent, attending a summertime camp, or being part of an organization, such as the scouts.
41	Fishing	*At a campground, there's always something interesting to do: fishing, hunting, swimming, boating,
42	Horseback riding	*or horseback riding.
43	People on horses	*Riding is becoming, once again, quite popular and the number of homeowners having a pleasure horse is increasing. Keeping a horse can be quite expensive with the costs of feed, housing, and healthyand care services gradually rising.
44	Man with horse	*However, all in all, the pleasure one gets riding, showing, or just watching a horse seems to make it somehow all worthwhile.

Slide	Description	Script
45	Horse at stable	*Those who do not have their own facilities for keeping a horse often will buy a horse and keep it at a boarding stable. At the stable, the horse will be fed, exercised, groomed, and generally well taken care of.
46	Man working on grooming	*Also, if the owner desires, professional training can be provided. Occasionally, the need arises for other services such as those of the veterinarian or professional farrier.
47	Man shoeing horse	*The farrier cleans and trims the horse's hoofs as well as doing corrective shoeing. He must be able to heat, bend, shape, and fit the shoe in a manner that will not cause, but help prevent, unsoundnesses. To be a skilled farrier requires some instruction along with years of experience.
48	Road view of stable	*Riding stables in Rhode Island, such as Stepping Stone, Bonniedale, and state stables at parks may handle up to 40 or more horses.
49	Ranch foreman and worker	*In a larger business, such as this, the general ranch work of the stablehand, groomer, caretaker is generally supervised by a ranch or stable foreman hired by the owner.
50	Trail riding	*Riding lessons are usually given several times per week by riding instructors. The fee for such instruction may range from $5 to $20. When one becomes a competent horseman, they may hire a horse to ride on their own through various trails and parks which were cut off and marked.
51	Announcer	*Entertainment is much a part of the business. Often there is a combination luncheon area and dancing hall at which parties can be held.
52	Outside theater	*A spot for amphitheater shows with professional entertainers brought in.
53	Wagon ride	*Or maybe just an old-fashioned wagon ride which lasts overnight.
54	Tack sales	*Selling tack and equipment is a major part of the business and as you can see here most anything can be purchased.

Slide	Description	Script
55	Man on horse	*A riding stable though is more than just a business as especially the owner knows. It's a place for the young to have lots of fun, the middle-aged just relax, and to rehabilitate the spirit of being young at heart for the elderly.
56	Boats at dock	*In Ocean State, as one can imagine, with its coastline and beaches and harbors, ther there are almost countless number of hours spent surfing,
57	Sail boating	*swimming, fishing, or boating.
58	Outrigger	*Marine recreation provides work for sales personnel at various seaside shops, stores, and marinas.
59	Boat captain	*Work for the charter boat captain, his mate and crew, as well as painters,
60	Man working on engine	*carpenters, designers, mechanics, and service personnel at marinas and boat-yards throughout the state.
61	Shot of inn	*Some marinas may have a hotel nearby. These require skills of the manager and office workers.
62	Boat cruise	*In addition, yacht, boat, and swimming clubs employ their own personnel.
63	Beach	*We have by no means covered all of the workers in outdoor recreation in Rhode Island.
64	Patrolmen	*At times, it seems it would be almost an impossible task to do.
65	Inside camp store	*It seems as though we all have part in outdoor recreation, whether we own a little harborside bait
66	Base camp	*and tackle shop, corner gun or bicycle shop, or the golf pro shop.
67	Canoeing	*It is hoped that we have left you the idea that somehow
68	Surf casting	*"fun" and "work" can be combined,
69	Shoreline	*and that maybe it's worth it for you to investigate the numerous, exciting but yet
70	Title slide	*challenging careers in outdoor recreation.
71	Credit	*Compiled by: The University of Rhode Island Career Education Project Resource Development Education

OUTDOOR RECREATION

Informational Material	Publisher
Camping in Rhode Island	R.I. Development Council Roger Williams Building Hayes Street Providence, RI 02908
Alpine Designs 1973 Mountaineering & Backpacking Gear	Alpine Designs A General Recreation, Inc. Co. 6185 East Arapahoe P. O. Box 3407 Boulder, CO 80303
School of Horsemanship	Bonniedale Farm Snake Hill Road Glocester, RI
Motorcycling and You	Channing L. Bete Co., Inc. Greenfield, MA
Light Horses	Superintendent of Documents U.S. Govt. Printing Office Washington, DC 20402
Boating 72	National Association of Engine and Boat Manufacture 527 Steamboat Road Greenwich, CT 06830
Youth Employment in Agriculture	Director Bureau of Labor Standards U. S. Dept. of Labor Washington, DC 20210
Employment Outlook for Recreation Workers (Bulletin 1785-106)	U. S. Dept. of Labor Labor Statistics Washington, DC 20210
Where The Action Is	U. S. Dept. of Interior Bureau of Outdoor Recreation Washington, DC 20402
Private Assistance in Outdoor Recreation	U. S. Dept. of Interior Bureau of Outdoor Recreation Washington, DC 20402
Federal Focal Point in Outdoor Recreation	U. S. Dept. of Interior Bureau of Outdoor Recreation Washington, DC 20402
Working for the Bureau of Outdoor Recreation	U. S. Dept. of Interior Bureau of Outdoor Recreation Washington, DC 20402

Audio-Visual Material

U.R.I. Slide-tape series: "Careers in Outdoor Recreation"

GUIDELINES FOR

CAREERS IN FOOD PRODUCTS

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

FOOD PRODUCTS

INTRODUCTION

Fish, shellfish, fruit, vegetables, poultry, meat, bakery, dairy, and grocery products are major categories of food products. Many businesses and occupations exist in each of these areas. Many part-time and full-time work opportunities are available for people of all ages. Most often, young people who are hard-working and interested in a food products career can work their way up toward the supervisory and management positions in a relatively short period of time.

A few of the more common food products occupations are meat cutter, food processor, store clerks, store managers, department manager, grocery checkers, stockers, inspectors, and delivery personnel. A large amount of the training needed can be through on-the-job training and work experience. A combination of on-the-job training and college or university studies most often are required of those seeking managerial-type positions. Students with initiative and interest have ample opportunity to find a rewarding and successful career in the food products area.

OBJECTIVES

Students should at least realize that many opportunities exist in the career field called Food Products. With proper exposure to the various careers, students should have a better understanding of the challenges, lifestyles, and rewards that could await them if they choose a career in today's food products industry.

1. Students will identify and describe at least one of the occupations associated with each of the major types of businesses in Food Products.
2. Students will demonstrate at least one skill associated with one of the occupations of their interest in Food Products.
3. Students will identify the major kinds of food products.
4. Students will describe the lifestyle of at least one worker in Food Products.
5. Students will list at least one activity around the home related to a career in Food Products.
6. Students will depict the basic education and experience necessary for one occupation identified for the major types of businesses.

Below is a list of businesses and agencies in Food Products and a list of major occupations

I. Types of Businesses

Retail, wholesale distributing outlets
Processing plants (meat, poultry, fish, shellfish)
Grocery stores, markets
Fruit and vegetable stands
Farms (production)
U.S.D.A. (inspection)
Research labs
Consumer information

II. Major Occupations

Skilled/Semi-skilled	Management/Supervisory
Stockers	Store manager
Dock boy	Department manager
Packers	Plant supervisor
Cutters	Plant foreman
Cooks	

Clerical	Technical/Professional
Secretary	Lab technician
Bookkeeper	Lab specialist
Clerks	Inspector
	Owner

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Invite a meat cutter to come and cut a beef carcass into salable cuts, demonstrating safety procedures and description of various meat cuts.

2. Use beef and pork charts to describe the salable, wholesale, and retail cuts of meat and related to occupations.

3. With the aid of slides, pictures, field trips, etc., discuss all of the job titles that had a part in bringing MILK to the homeowner's table: e.g., feed dealer, herdsman, bulk tank driver, farm inspector, plant workers, managers, secretaries, drivers, grocery workers, etc.

4. Have students list all of the fruits and vegetables they can think of and then give an assignment to groups of students to determine what part of the country the products came from and the steps and occupations involved from tree to table.

5. Have a baker come in to the classroom and give a cake decorating demonstration and answer questions about the bakery business. Perhaps have a group of students responsible for having a series of good "occupational" questions ready to ask.

6. Take a field trip to a meat processing plant or meat department of a grocery store. Or have a group of students do their own interview and report on their own time, giving them guidelines for interviewing and reporting.

7. Take a trip to a dairy farm during milking time and from there to a dairy plant for a tour of the operation there.

8. Arrange a tour through a bakery.

9. Arrange a tour through an egg or poultry processing plant.

SUGGESTED STUDENT LEARNING EXERCISES

I. Meat Cutting: Chicken, fish, beef

Objectives:

1. The student will understand and use safe and proper techniques of cutting and knife care.
2. The student will be able to identify, in order of commercial importance, the most popular cuts of chicken.
3. The student will be able to cut the meat into the main commercial cuts.

Materials:

Table
Knife, cleaver (and sharpener)
Selected kind of meat to cut
Washing facilities
Container for wastes
Container for portions saved
Aprons
Cutting board

Procedure:

1. Explain the importance of the SHARP knife. (To avoid jerking and possible injury)
2. HONING: Honing is done on an oil stone to maintain a scumfree abrasive surface. The operator grasps the handle of the knife with his right hand, takes a position slightly to the left of the stone and places the heel of the knife blade on the end of the stone nearest to him. The blade of the knife is tilted up enough to make the bevel lie flat with the stone. The finger tips of the left hand are placed on the flat of the blade near the back edge to exert pressure on the blade. With a sweeping motion toward the right of the stone, the knife is drawn completely across and inward against the cutting edge. The knife is then turned over and drawn across the stone toward the operator. To test for sharpness, draw the knife lightly across the thumbnail. It should not slide smoothly or rasp the nail but pull on it.

3. STEELING: The steel is held firmly in the left hand in a position almost diagonal to the body but with a slight upward tilt. This is important as it permits the free movement of the knife across the steel without drawing it too close to the hand holding the steel. Place the heel of the blade against either the near or far side of the tip of the steel at a 20 to 25 degree angle and bring the blade down across the steel toward the left hand with a quick swinging motion of the right wrist and forearm. The entire blade should pass over the steel. Bring the knife in position on the opposite side of the steel and repeat the same motion.
4. DEMONSTRATE AND DISPLAY: Give a demonstration with the students observing as you cut and describe the procedure. Previously should be prepared a tray on which to place the cuts with names and prices labeling each. Discuss the cuts in order of value as well as points of safety.
5. STUDENTS' EXPERIENCE: Take another section and begin step by step as follows with the students having them do it as you do, giving assistance to individuals as needed. For example, if working with a chicken:
    a. remove the wing
    b. remove the leg
    c. remove the tail piece
    d. separate the rib and neck piece from the breast
    e. divide the breast and back into two sections
6. Have each pair wash (warm, soapy water and brush), hone, steel, and oil their knife and return it to the proper place.

Associated Careers:

Meat cutter, meat packer, meat inspector, meat salesperson

II. Candling Exercise: Making the egg candling device

Objectives:

To familiarize students with proper candling techniques, its importance to maintaining quality products, and to expose them to the job of candler, grader, and salesperson.

Materials:

Cardboard container such as a corn meal box
100 watt light bulb
Scissors or sharp knife
2 wooden blocks shaped to fit container lying at 45 degree angle
Eggs obtained at U.R.I., student's farm, etc.

Procedure:

1. Cut a 1 inch hole in cover of container
2. Cut a hole in the bottom of container to allow cord to pass through (make as small as possible)
3. Put bulb in container and attach a cord
4. Place the cover on the container
5. Mount the container on wooden blocks (other materials can be used) at 45 degree angle and glue together

Candling Exercise continued: Candling the eggs

Procedure:

1. Place the USDA egg chart on wall or board
2. If not familiar with candling procedure, consult EGG GRADING MANUAL Agriculture Handbook No. 75, U. S. Department of Agriculture, Washington, DC 20250

Associated Careers:

Candler, grader, packer, salesperson

FOOD PRODUCTS

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. The food products industry is the largest industry in the U. S. selling annually how many billions of dollars worth of products? _____
   a. 10
   b. 40
   c. 70
   d. 100

2. Which of the following are ESSENTIAL in every area of food products? _____
   a. Quality
   b. Cleanliness
   c. Efficiency
   d. All of the above

3. "Boning" would be a skill learned in what industry? _____
   a. Dairy
   b. Fish
   c. Egg
   d. Meat

4. The leading fruit crops grown in Rhode Island are: _____
   a. apples and peaches.
   b. peaches and pears.
   c. blueberries and strawberries.
   d. cherries and grapes.

5. A meat cutting apprentice can usually reach the top of his field (in skill) in about: _____
   a. one year.
   b. three years.
   c. five years.
   d. ten years.

6. Meat cutters and bakers can receive their training through: _____
   a. on-the-job training.
   b. specialized schools.
   c. formal apprenticeships.
   d. all of the above.

7. Which of the following jobs would NOT be going on in an egg processing plant? _____
   a. Pricing
   b. Grading
   c. Candling
   d. Inspection

8. Which of the following workers would be found in a dairy processing plant? _____
   a. Dairy herdsman
   b. Tank truck driver
   c. Shipping clerk
   d. Milkmaid

9. INSPECTORS are most often involved in which phase of food products? _____
   a. Production
   b. Processing
   c. Distribution
   d. Sales

10. Which of the following would NOT usually be found in a grocery store: _____
   a. Meat cutter
   b. Produce manager
   c. Inspector
   d. Sales clerk

11. Which of the following careers usually require a college degree: _____
   a. Egg inspector
   b. Food technician
   c. Baker
   d. Meat department manager

12. The number of workers employed in the seven areas of food products in Rhode Island exceeds: (choose the best answer) _____
   a. 1,000
   b. 5,000
   c. 10,000
   d. 15,000

13. Which of the following is an INCORRECT statement concerning the trends in the food products industry? _____
   a. The number of farmers is decreasing.
   b. The number of total workers is decreasing greatly because of automation.
   c. The demand for food products workers will remain good.
   d. The food industry will remain the country's largest industry.

14. Food products workers at a poultry processing plant would include all below except: _____
   a. plant manager.
   b. meat cutter.
   c. meat packers.
   d. poultry farmer.

15. To become a store manager in the food products industry usually requires: _____
   a. only a high school diploma.
   b. only work experience in the field.
   c. a two-year business management degree.
   d. a four-year business management degree.

FOOD PRODUCTS

Achievement Test Answers Master

Question	Answer
1	C
2	B
3	D
4	A
5	C
6	D
7	A
8	D
9	B
10	A
11	B
12	C
13	C
14	D
15	D

Main sources of information used in developing test:

U.R.I. Slide-tape series
Information materials provided with unit

FOOD PRODUCTS

Interest Inventory

_____ 1. Candle eggs to detect blood spots
_____ 2. Drive a refrigerated truck for a canning company
_____ 3. Operate a cartoning machine in a dairy plant
_____ 4. Work at a checkout counter in a grocery store
_____ 5. Stock shelves in a grocery
_____ 6. Sharpen a boning knife (for meat cutting)
_____ 7. Operate an automatic rolling pin in a bakery
_____ 8. Operate an egg grading machine
_____ 9. Wash the floor in a meat packing plant
_____ 10. Arrange a display of fruits and vegetables
_____ 11. Pack boxes of fish to go to cold storage
_____ 12. Package steaks in a grocery meat department
_____ 13. Prepare raw fish for processing
_____ 14. Operate a forklift in an egg processing plant
_____ 15. Weigh, slice, and sell meat at a meat counter
_____ 16. Operate grading and sizing machine for blueberries
_____ 17. Repair a grinding machine in a meat market
_____ 18. Sort fruit and vegetables in a grocery to detect bad produce
_____ 19. Sort and grade various kinds of fruit
_____ 20. Deliver milk and dairy products
_____ 21. Sell fruits and vegetables at a roadside stand
_____ 22. Counsel a customer on purchasing a wedding cake
_____ 23. Sell bakery goods
_____ 24. Do time studies on workers processing frankfurters
_____ 25. Sell beef carcasses wholesale to grocery stores
_____ 26. Manage assembly line workers in a vegetable processing plant
_____ 27. Supervise unloading of fishing boats at a processing plant
_____ 28. Oversee workers in an apple orchard
_____ 29. Handle customer complaints at a supermarket
_____ 30. Purchase supplies for a dairy plant
_____ 31. Oversee the distribution of dairy products
_____ 32. Train workers in a dairy plant
_____ 33. Manage a vegetable stand
_____ 34. Cut a quarter of beef into its salable parts for grocery sales
_____ 35. Decorate cakes in a bakery
_____ 36. Write and distribute grocery store advertisements
_____ 37. Inspect meat chickens for diseased organs
_____ 38. Conduct research on new kinds of foods
_____ 39. Operate machinery to control temperature of milk being pasteurized
_____ 40. Test a sample of milk for bacterial count

FOOD PRODUCTS

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1[illegible] - 21 Semi-skilled

22 - 25 Clerical

26 - 33 Technical or Professional

34 - 40 Management or Supervisory

CAREERS IN FOOD PRODUCTS

Slide	Description	Script
1	Title slide "Careers in Food Products"	Presenting a look at Careers in Food Products; an explanation of the scope, skills, and services of the food products industry.
2	Man decorating meat case in a market	The gathering, processing, and preserving of food has long been one of the basic physical concerns of man. The world's largest industry, the food industry, is also the largest in the U.S., selling 70 billion dollars worth of products annually.
3	Oxen plowing	Tonight, two-thirds of the world's people will go to bed hungry. The task of increasing, improving, and distributing food products is a changing and growing one. In Rhode Island, as throughout the country, there is a constant need for trained personnel in all phases of this vital area of Agribusiness and Natural Resources.
4	Men with broilers hanging from a machine	There are seven major divisions of food products in Rhode Island, employing over 11,000 workers. These consist of poultry and eggs, fish and shellfish,
5	Fruit and vegetable counter in market	fruit and vegetables, and meats,
6	Bakery shop	dairy products, grocery products, as well as bakery products.
7	Egg grader	The food products worker takes over where the production worker leaves off. Here, we see a worker sorting and grading eggs. He must understand temperature, moisture, and light requirements for the eggs as well. Such a job often involves the operation of sophisticated equipment for quicker and more thorough work.
8	Conveyor of peas	These ladies conduct the final inspection of peas before they go on to processing and packaging for shelf or freezer.

Slide	Description	Script
9	Fish packers with wooden box	These men are receiving a shipment of fish, placing it in wooden containers to be moved to cold storage.
10	Frankfurters	This worker operates a machine for the making of frankfurters in a modern meat-packing plant. Operating, grinding, filling, mixing, stuffing, and linking machines are examples of skills learned by meat processing workers.
11	Girls cleaning broilers with gloves	Many steps which most of us never see go into preparing food products for processing or packaging. These girls are conducting the final preparation of broilers (or meat chickens) before the task of cutting or freezing takes place.
12	Splitting a carcass with a power saw	This meats worker is splitting a carcass with a power saw after the removal of internal organs in preparation for the detailed work of meat cutter.
13	Floor scrubbing	Cleanliness and quality are always vital steps in any food products operation. This worker washes the floor after a day's work in a meat department.
14	Beef inspector (hat and gloves)	This trained inspector examines a beef carcass for grading purposes and to spot any disease or other deficiencies in quality.
15	Equipment inspector	Equipment must be inspected as well as food products. This quality control technician is checking a grinder and mixer after cleaning to insure smooth and safe operation. Skilled mechanics are also needed to maintain the large variety of machinery in operation.
16	Lab technician (blood samples)	The quality of our food is maintained only with great cost and effort, employing the skills of trained personnel who know their job and the importance of doing all things well. This woman runs tests on blood samples of cattle to insure freedom from disease and, therefore, quality milk and milk products for us.

Slide	Description	Script
17	Baker with cake	Bakery products make up another large segment of the food industry. The baker is a highly skilled worker who receives much personal satisfaction for his training and hours of labor. Mixing, baking, and decorating are but a few of the skills that must be mastered.
18	Meat cutter - knife	The meat cutter is another of the many skilled workers in the food industry. The sharpening of knives is a basic skill that includes several processes ending with the use of the "steel" as shown here. This assures the finest sharpness. A sharp knife is a necessity for speed as well as safety.
19	Meat cutter - boning	Boning (the cutting of the carcass into salable cuts of meat) is another skill which takes months of training and practice in order to handle the volume of meat that must be prepared for selling to food shoppers.
20	Meat cutter - "stacking steaks"	Here, the meat cutter prepares steaks for packaging. Notice the thin layer of fat that is left on to make for better cooking.
21	Girl packaging steaks	Here, we see a worker packaging the meat for protection from the air and to insure freshness all the way to the meat counter. Meats workers, like most food products workers, must understand regulations and procedures that will insure that products are manufactured according to federal and company standards.
22	Girl dairy packaging with machine	Good packaging is especially important in the dairy industry because of quick spoilage. Here, we see a modern dairy operation with employees packaging ice cream and other dairy products. They need an understanding of food preservation as well as machine operation.

Slide	Description	Script
23	Forklift	Many jobs in the food products industry deal with the distribution of the finished product. These jobs require people who are responsible and able to insure safe and orderly transfer from processing plants to retail stores. This lift operator is working in a poultry plant.
24	Refrigerator truck	Shown here is a refrigerator truck for the safe transport and preservation of frozen foods from the processing plant. The truck driver usually must be able to keep, summarize, and analyze records, as well as dealing with customer complaints.
25	Bookkeeper	In every business, office workers are a vital link in the chain of production. Many, such as this woman in the dairy industry, must have an understanding of the business as well as bookkeeping skills.
26	Key punch operator	With today's expanding industries, there is often a need for office personnel with skills in data processing as this worker who is using a key punch machine to type data onto IBM cards.
27	Production supervisor (white coat and head gear)	Foremen and supervisors, such as this production supervisor in a meat packing plant, are responsible for personnel in their area of work. The supervisor needs a thorough knowledge of the jobs in his area to be able to demonstrate, observe, and correct. He must command respect and be able to stimulate to excellence.
28	Manager (suit and tie)	The manager in a food products plant or store must be knowledgeable in almost all phases of the business and be able to work with people, having the know-how to keep the operation running smoothly. Managers must also write and speak effectively and hire and train employees. This sales manager is in charge of a number of workers and is writing a report typical of his work.

Slide	Description	Script
29	(Food) technician in lab	The demand for new and unique food products (from convenience foods to space foods) increases the need for food technicians in many industries. Food technicians are college graduates who need both the knowledge of food chemistry and practical understanding of their specific area of work.
30	Industrial engineer with pad and pencil	Engineers also find their way into the food products industry. This industrial engineer is timing various operations done by workers to check performance. Here, he is doing a time study on women packaging frankfurters.
31	Girl pricing packages in aisle	There is a constant need for qualified people in grocery stores and supermarkets. One of the skills necessary is the stocking of shelves in an orderly manner and knowing the inventory well.
32	Man in fruit market	This fruit market worker needed to learn how to make displays, order, and receive produce, as well as business management and serving customers.
33	Meat salesman cutting cheese	Sales people often need to know how to operate slicing machines and scales as well as cash registers when working in the meat or product department.
34	Making a sale - girl at register	Sales personnel are always in contact with people. Therefore, the worker must be neat, friendly, accurate, and efficient; all the things that help make the sale of food products smooth and enjoyable to the customer. A satisfied customer is <u>always</u> the final goal in mind.
35	That first step	It's never too early to begin investigating the hundreds of career possibilities available to you. Now's the time to begin thinking and learning. You will have opportunities to learn a skill while in school that will prepare you to enter the world of work with clearer direction.

Slide	Description	Script
		It is hoped that this presentation has shown the worth and variety of careers in Food Products.
36		Compiled by: The Career Education Project Resource Development Education University of Rhode Island

FOOD PRODUCTS

Informational Material	Publisher
Career Opportunities in the Meat Packing Industry	American Meat Institute 59 E. Van Buren St. Chicago 5, IL
Opportunities For You	American Meat Institute 59 E. Van Buren St. Chicago 5, IL
Rewarding Careers in a Dynamic Industry	Available at your land grant college
Milk Flavor Control in the Processing Plant	Cooperative Extension Service University of Rhode Island Kingston, RI 02881
Careers Unlimited - In the Poultry Industry	Dept. of Animal Industry and Veterinary Science West Virginia University Morgantown, WV 26506
National Society of Live Stock Record Associations	National Society of Live Stock Record Associations Allan C. Atlason, Secretary 3964 Grand Avenue Gurnee, IL 60031
Careers for Youth in the Poultry Industry	Western Poultry Congress P. O. Box 307 Baldwin Park, CA 91706
Miracle in the Supermarket	American Feed Manufacturers Assoc. 53 West Jackson Blvd. Chicago, IL 60604
Exploring Careers in Modern Agriculture	Pennsylvania State University Dept. of Agricultural Education University Park, PA
Vocational Education and Occupations	United States Government Printing Office Division of Public Documents Washington, DC 20402

Audio-Visual Materials

Slide set: "Careers in Food Products" (for use with Coxco Sound-Slide system or Carousel, etc.)

Filmstrip: "The Food Processing Industry" (includes script manual and reel-to-reel tape)

Cassette tape: "Careers Unlimited: Food Production" (Classroom World Productions, Inc. No visuals included)

GUIDELINES FOR

CAREERS IN SMALL ANIMAL TECHNOLOGY

RESOURCE DEVELOPMENT EDUCATION
College of Resource Development
University of Rhode Island
Kingston, Rhode Island

SMALL ANIMAL TECHNOLOGY

INTRODUCTION

Small Animal Technology has many career possibilities. Many varied careers and career opportunities can be found at pet shops, boarding and grooming kennels, and small animal hospitals. Animal caretakers, groomers, lab technicians, veterinary assistants, owners, and managers are but a few of the occupations to explore. Preparing for any one of these occupations begins with a tentative interest in working with animals. Thereafter, practical work experience can be attained while still in high school with specialization in the field through college and university programs coming after graduation.

OBJECTIVES

Hopefully, students will know of these and many more career opportunities in Small Animal Technology. In addition, students should be able to answer questions as to the type of work and type of worker that is associated with each of the careers he or she is exposed to.

1. Students will identify and describe at least one occupation associated with work at a pet shop, boarding kennel, and small animal hospital.
2. Students will describe the lifestyle of at least one worker in Small Animal Technology.
3. Students will demonstrate the proper care and handling of common pets and be able to explain how experience in these tasks can be related to careers in Small Animal Technology.
4. Students will identify five kinds of pets and one breed of each and relate to it the importance in buying and selling pets in a pet shop.

Below is a list of major businesses and agencies in Small Animal Technology along with a list of some of the major occupations

I. Types of Businesses

Small animal agencies
Animal hospitals
Grooming salons
Boarding kennels
Institutions (colleges, universities)
Research labs
Pet shops

II. Major Occupations

Semi-skilled/Skilled

Groomers
Caretaker
Salesperson

Management/Supervisory

Owners
Managers
Foreman

Clerical

Receptionist
Secretary
Bookkeeper

Technical

Lab assistants
Lab technicians
Small animal specialist

Professional

Veterinary

GENERAL SUGGESTED LEARNING ACTIVITIES

1. Have several of the students bring in their own pets which they can talk about and demonstrate the care and handling of.

2. Have different groups of students responsible for various classroom displays on Small Animal Technology. One group may, for example, take and post pictures of workers in action.

3. Assign students a project to investigate various types or breeds of pets and small animals. Let them work on their own with the aid of library books and charts, making a notebook. Discuss their notes in class.

4. Take a field trip to a pet shop, boarding kennel, or animal hospital. Have the students divide into groups to observe and interview workers. A follow-up the next class may include brief oral reports on the occupations each group learned of.

5. Invite a worker from a grooming salon to come as a resource person to the class. Have a student bring in a pet dog or cat which may be clipped or groomed.

STUDENT LEARNING EXERCISES

I. Conducting a Pet Show

Objectives:

To introduce the student to techniques in training, judging, and showing pets

Materials:

Booklet, "How to Bathe Your Dog," and other grooming and judging material
Students' pets
Facilities and tools for grooming and training (brushes, combs, etc.)

Procedure:

1. Have the students read selected material on grooming and judging, e.g., "How to Bathe Your Dog."
2. Have students with pets practice grooming and training.
3. Have the students with pets "show" them before students without pets and other invited guests who will act as judges. Give some sort of awards to winners.

Associated Careers:

Groomers, caretakers, bathers, trainers

II. Caged Pets in the Classroom or Other Area in the School

Objectives:

To introduce students to a variety of pets (and their required care) as would be found in a pet shop

Materials:

Canary cage and food
Guinea Pig Habitrail and food
Fish tank and accessories

Procedure:

1. Parakeet or canary:
   Have students read the booklet, "Bird Care."
   Have the students teach the bird how to talk (see page 10 of "Bird Care").
   Have the group take turns cleaning the cage and feeding.

2. Guinea Pig:
   "Habitrails" can be purchased which train the guinea pig to do various stunts and travel through plastic tubes to reach food. Additional tubing and accessories can be added indefinitely. (For information, contact a local pet store or aquarium.)

3. Tropical fish or goldfish:
   Purchase or borrow a small aquarium.
   Have the group of students read "Tropical Fish Care" and other pertinent information.
   Purchase several goldfish or other small fish and needed accessories such as scenery or mechanical water gadgets as well as plants to provide oxygen and keep the water clean.

Associated Careers:

Pet shop manager, pet shop salesperson, caretaker-assistant

III. Feeding Experiment

Objectives:

To introduce the students to the nature of small animals research work and the importance for knowing the proper diets for pets.

Materials:

Three wire pet cages with water and feeding devices
Six white rats, chicks, or hamsters and appropriate food
Booklets describing the diet of animals used

Procedure:

1. Borrow or make three separate cages with inverted water bottles or other feeding devices.
2. Purchase six white rats, chicks, or hamsters.
3. Have the students determine the normal diet for the animal chosen.
4. Place two animals in each cage.
5. Feed one pair a normal diet.
   Feed another pair a diet deficient in an essential substance, such as high quality protein.
   Feed the third pair a diet with an added or unrecommended substance.
6. Have the students keep careful records of the animals' weight change, appearance, vigor, etc., for a set period of time (e.g., 3 - 6 weeks).

Associated Careers:

Lab technicians, lab assistants, caretakers, researchers

SMALL ANIMAL TECHNOLOGY

ACHIEVEMENT TEST

Directions: Write the letter of the correct answer on the answer line at the right of each question. Though several may be correct to some degree, select the best possible answer.

1. Professional veterinarians need trained assistants to do many things including: _____
   a. perform surgery.
   b. make diagnosis.
   c. perform medical experiments.
   d. perform laboratory tests.

2. Which of the following best describes the scope of veterinary medical practice today? _____
   a. guards the health of animals that produce meat, milk, and fiber
   b. cares for an increasing number of companion animals
   c. is involved with care and treatment of laboratory animals
   d. all of the above

3. Which of the following statements best describes the employment situation in Small Animal Technology? _____
   a. opportunities for high school students are very limited
   b. demand for trained people exceeds the number available
   c. both a and b are correct
   d. neither a and b are correct

4. Animals are most often groomed at: _____
   a. animal hospitals.
   b. boarding kennels.
   c. grooming salons.
   d. both b and c

5. At a boarding kennel, animals need to be: _____
   a. fed and exercised.
   b. x-rayed.
   c. treated for disease.
   d. all of the above

6. Which of the following businesses and agencies would <u>least</u> likely employ an animal caretaker? _____
   a. animal hospital
   b. boarding kennel
   c. animal breeding laboratory
   d. pet shop-aquarium

7. The receptionist at an animal hospital is responsible for: _____
   a. calming down the animals.
   b. writing prescriptions.
   c. directing patients to treatment rooms.
   d. x-raying and lab tests.

8. In surgery, the veterinary assistant must often: ____
   a. take a blood test of the animal.
   b. give an anesthetic to the animal.
   c. groom the animal.
   d. clip the animal (clip, meaning to remove hair).

9. The average stay of an animal at an animal hospital is: ____
   a. one week.
   b. ten days.
   c. two days.
   d. two weeks.

10. Workers in kennels and pet shops receive most of their training: ____
   a. in four-year college programs.
   b. in two-year technical programs.
   c. in practical work experience in the business.
   d. none of the above

11. Which of the following personal characteristics is most essential for a person desiring a career in Small Animal Technology? ____
   a. must not fear the animals
   b. must love animals
   c. must have past experience with animals
   d. must enjoy working indoors

12. The number of pets or companion animals in the United States exceeds: ____
   a. 700,000.
   b. 7 million.
   c. 70 million.
   d. 700 million.

13. The number of veterinary hospitals and clinics in the United States exceeds: ____
   a. 300.
   b. 30,000.
   c. 3,000.
   d. 300,000.

14. Approximately _____% of the businesses in Small Animal Technology are willing to employ high school students. ____
   a. 70
   b. 30
   c. 10
   d. 50

15. At a pet shop, one would most likely not find: ____
   a. a groomer-trainer.
   b. salesperson.
   c. manager.
   d. pet caretaker.

SMALL ANIMAL TECHNOLOGY

Achievement Test Answers Master

Question	Answer
1	D
2	D
3	B
4	C
5	A
6	C
7	C
8	B
9	B
10	C
11	A
12	C
13	B
14	D
15	A

Main sources of information used in developing test:

Employment studies
U.R.I. slide-tape series
Career Job Guide G-16
Careers in Small Animal Technology by U.R.I. 73
Publication 70-1

SMALL ANIMAL TECHNOLOGY

INTEREST INVENTORY

_____ 1. Feed animals at an animal care center
_____ 2. Groom a dog at a boarding kennel
_____ 3. Sell animals in a pet shop
_____ 4. Sell dog leashes, animal food, and fish tanks at a pet shop
_____ 5. Bathe an animal at a grooming salon
_____ 6. Clean the cages at a boarding kennel
_____ 7. Operate clippers for grooming a dog
_____ 8. Assemble stock in a pet store
_____ 9. Give an animal a treatment shampoo
_____ 10. Operate dryers in a grooming salon for pets
_____ 11. Demonstrate new products in a pet store
_____ 12. Make change for sales transactions in a pet store
_____ 13. Groom a dog for a dog show
_____ 14. Keep an accurate record of appointments for pets to stay at a boarding kennel
_____ 15. Conduct animals to various treatment rooms at an animal hospital
_____ 16. Advise owners on how to take care of their pets after an operation
_____ 17. Make an appointment schedule at an animal hospital
_____ 18. Keep account of stock at a pet shop
_____ 19. Greet a pet owner and arrange for his pet's examination
_____ 20. Type prescriptions at an animal hospital
_____ 21. Keep records of an animal's improvement after an operation
_____ 22. Keep a record of bills to be paid to an animal hospital
_____ 23. Administer an anesthestic to an animal before it undergoes surgery
_____ 24. Operate an X-ray machine at an animal hospital
_____ 25. Hold an animal while an operation is being performed
_____ 26. Take a cat's temperature
_____ 27. Listen and follow directions of a veterinarian during an animal operation
_____ 28. Perform a laboratory test to determine an animal has a disease
_____ 29. Watch an animal breathing during a surgical operation
_____ 30. Sterilize surgical equipment in an animal hospital
_____ 31. Observe and record developments in laboratory animals
_____ 32. Operate a blood machine in the laboratory of an animal hospital
_____ 33. Inject an anesthestic into an animal
_____ 34. Supervise the care and feeding of the fish in a pet shop aquarium
_____ 35. Determine boarding rates at a kennel
_____ 36. Explain to a customer the care of an animal at a pet shop
_____ 37. Discuss pet grooming with an owner
_____ 38. Detect disease in a pet store aquarium
_____ 39. Perform surgery on a small animal
_____ 40. Advise an owner on how to guard against common diseases in his pet

SMALL ANIMAL TECHNOLOGY

INTEREST INVENTORY

KEY FOR OCCUPATIONAL LEVELS

1 - 13 Semi-skilled

14 - 22 Clerical

23 - 33 Technical or Professional

34 - 40 Management or Supervisory

CAREERS IN SMALL ANIMAL TECHNOLOGY

Pause when music is playing, then

Slide	Description	Script
1	Dog with mouth open (Introduction)	Hi! My name is Ralph, and I'm one of the 70 million pets and companion animals in the U.S. There's a big need for people who know how to work with us. So today I'd like to take you around and show you some of the people who work in Small Animal Technology. While I'm looking for the key to this place, you can go to the next slide and meet my associate, Karen. She's up on the sun deck. Everytime you hear her purr, you can change the slide. "Purr" There she is. Go ahead.
2	Cat on roof	(Ouch!) This is sure a hot tin roof. Us animals decided that since we're on top of things, as far as Small Animal Technology goes, that we'd narrate this program and do a better job than people could.
3	Title slide	So here goes - Careers in Small Animal Technology. Let's start by looking at some of the areas in Small Animal Technology.
4	Dog sleeping in cage	That's good, Karen. First, here's a boarding kennel. Hi, Joe. Joe, Joe? Oh well, what's life? Nothing to do but read the paper. Well anyway, until his people get back from their vacation, he's gonna relax.
5	Cat put to sleep	Then there's the animal hospital. I'm getting sleepy. Don't worry, big fellow. Big fellow, big fellow? Oh well, big fellow will not feel a thing. She's under anesthesia. She'll be out cold in a minute.

Slide	Description	Script
6	Dog being groomed	Also, there's grooming salons. Oh you're beautiful, Henry. We'll stop a little later and talk. Okay?
7	Parrot	Then there are pet shops. They have a big variety in pets-even funny-looking African birds like Rutherford here. "Watch what you're saying, you shaggy mut. This place may be bugged, this place may be bugged."
8	Lady feeding fish	Often fish producers and aquariums are sold at pet shops as well. I'd have Fred there say hello, but it's not polite to talk with your gills full. Other places that employ workers in Small Animal Technology are the animal rescue leagues, S.P.C.A.
9	Rats in cage	Wait a minute, wait a minute, you dirty rat, you dirty rat. Don't you forget us laboratory animals. Do you know what we go through for most people out there? Sorry, Teddy, I'd never forget you. You will find lab animals in hospitals and university research labs of many kinds.
10	Dog kennel	Well, I guess you want to learn some more about what goes on and what the people do who have the privilege of working with us animals. Let's start with the boarding kennel.
11	Man on telephone	This is Frank. He is the boss, he's the manager here at the pet lodge.
12	Customer at desk	He has to know about business records, greet the pet owners, and train the caretakers and groomers.
13	Girl hosing down dog	This girl is a caretaker. Some of the things she's learned is to clean the different kinds of animal cages and feed and exercise us real good.

Slide	Description	Script
14	Dog being groomed	Oh you must've been a beautiful puppy. Oh, you again, Henry. She sure did a nice job of clipping and grooming. Now if Henry or anybody else ever got out of hand, she'd know what to do. She'd put a gentle muzzle around his snout. If he ever got bad, she'd send him to the animal hospital where they put him under anesthesia.
15	Sad faced dog	Oh, it's Saturday already. Time for another bath. It's not too bad though. Frank knows how to keep suds out of my tender eyes and ears. He'll feel better and won't have as much trouble with fleas and other pests.
16	Dog behind cage	We all enjoy our time here at the boarding kennel. The workers really take good care of us.
17	Girl on phone	Here we are now at the reception desk of an animal. It's the receptionist's job to answer calls, keep records of incoming patients, and take the pets inside the treatment room.
18	Dog between two people	"Oh, I don't feel so good, doc." Well, this is the place to be. The vets and their assistants will diagnose the problem and treat you really good.
19	Vet assistant applying medication	Look, there's a veterinarian assistant. She learned how to run the anesthesia machine there and how to do blood tests and all sorts of things to free the veterinarians to concentrate on the things only he can do.
20	Operation, doctors	There's another assistant helping on an operation. They need to be as careful and good as human doctors do.
21	Operation - vet assistants	There's a big need for more veterinarian assistants and caretakers, too. It's important that they like animals; but most of all, that they don't fear any of us.

Slide	Description	Script
22	Girl working on cat	Well, Priscilla's still out. She'll wake up feeling better, I'm sure.
23	X-ray machine	Look here, this is one of those fancy x-ray machines that the hospital uses to find out what's wrong inside.
24	Dog in bath tub	"Oooooo, that feels good." He didn't use to like baths, but that medicated shampoo really helps your skin problem.
25	Dog in bath tub getting hosing down	She really likes her work and treats each patient like they belong to her.
26	Manager	We're at a pet shop now. This is a manager of the pet shop-aquarium. He has to know more about business management and selling than any area in Small Animal Technology.
27	Salesman	This is big Ed. He's one of the guys that takes care of the pets and also sells to the customers. Like most pet shop workers, he learned most of what he knows by on-the-job experience.
28	Man on phone sitting down	Here, he's advising a customer about a purchase. Many traditional pets like green turtles, you remember them. Well, now they're banned because of diseases they carried. That's too bad.
29	Fish	There is a large variety of pets, from crabs (these are hermit tree crabs)
30	Lizards	to lizards.
31	Shop	This shop has a large stock of fish, aquariums, and supplies. The price of fish can range from two cents to four or five hundred dollars. Boy!

Slide	Description	Script
32	Man smoking pipe	Pet stores have all sorts of accessories, like these bird cages, and even books that help people know about their pets and how to take care of them.
33	Man wheeling table near basket	Now, we get to teddy's pride and joy, the small lab animal workers. A lab or care facility will usually have a veterinarian assistant and caretakers, like this fellow who's changing the feed and water containers.
34	Sterilizing machine	All the cages need to be scrubbed and then put into this big sterilizing machine.
35	Man shutting door	One of the guys wheels the cage in, then turns the dials, and in twenty minutes out she comes - spic and span.
36	Girl checking cages out	Well, I'd better get back to my cage before somebody misses me. It sure has been fun showing you the careers available in Small Animal Technology. Ah, here comes somebody now.
37	Credit slide	Compiled by the: Career Education Project Resource Development Education University of Rhode Island
38	Cat on roof walking away	Ha, ha, ha! Don't you believe it! Bye now!

MUSIC

SMALL ANIMAL TECHNOLOGY

Informational Material	Publisher
Longlife Tropical Fish Care	P. O. Box D Harrison, NJ 07029
Job Guide G-16 356 Animal Keeper	Career, Inc. Larco, FL 33540
Preveterinarian Science	University of Vermont College of Agriculture and Home Economics Burlington, VT 05401
Pet - Tabs (pamphlet)	Beecham, Inc. Bristol, TN 37620
Bird Care (pamphlet)	8 in 1 Pet Products Inc. 100 Emjay Blvd. Brentwood, NY 11717
What You Should Know If Your Pet Needs An Operation	Veterinary Medical Division Ayerst Laboratories 685 Third Avenue New York, NY 10017
What You Should Know About Your Dog's Epileptic Seizures	Veterinary Medical Division Ayerst Laboratories 685 Third Avenue New York, NY 10017
What You Should Know About Traveling With Your Pet	Veterinary Medical Division Ayerst Laboratories 685 Third Avenue New York, NY 10017

Audio-visual Material

Slide series (separate slides and cassette tape):

"Careers in Small Animal Technology"

FINAL NOTE

All of us, at one time or another, go through the experience of searching for a career that is right for us. Perhaps, while in school, we dreamed of being a mechanic, a bank president, a pilot, or a store manager. Perhaps, after school, we drifted from job to job hoping that one would seem filled with opportunity and right for our interests and lifestyle. Perhaps some of us became successful, perhaps most of us never realized we would end up with the kind of job we have. Maybe less would have been left to chance if, at an early stage, one would have the opportunity to explore our interests and plan around them for our career in the future.

Students must build their own experiences, both work-oriented and education-oriented. Instructors and educational programs can be merely tools or agents to help to assist them. However, the better these tools and agents are, the greater the possibility for more successful students. That's why Career Education is so important.

Career Education offers all students with all sorts of goals opportunity - opportunity to explore, become aware of, develop, and specialize in the career area that they decide is right for them. The Career Education concept does not place emphasis on any one job level but on all levels. Each job is important, each choice right if the job and worker are compatible.

Presenting Career Education in Agribusiness and Natural Resources to your students is a challenge. We hope you accept it, and use this material as a guide to mold, shape, and formulate your ideas into a dynamic, relevant program for your students as they explore the careers in Agribusiness and Natural Resources.

ADDITIONAL U.R.I. PUBLICATIONS

The following publications are available upon request (single copy) while a limited supply lasts. Information for purchasing quantities will be forwarded if you contact:

College of Resource Development
Resource Development Education
18 Woodward Hall
University of Rhode Island
Kingston, RI 02881

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U.R.I. Guidelines for Careers in:

Floriculture
Food Products
Small Animal Technology
Marine Resources
Resource Conservation Management
Outdoor Recreation
Turf Management
Landscape-Nursery

Includes information on the employment situation, types of occupations, a competency checklist, and forms for cooperative work experience training.

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U.R.I. Employment Studies

Includes a business list and employment data, such as the number of businesses, educational levels preferred by employers, part-time and seasonal opportunities, etc.

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U.R.I. Career Summaries

For each area, the summary briefly lists what the careers are, describes where they work, what they do in their work, and how to pursue an interest in the career area.